



BARS & PIPES

PROFESSIONAL

USER GUIDE



THE BLUE RIBBON SOUNDWORKS

First Printing.

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TABLE OF CONTENTS

| | |
|--|-----|
| Chapter 1 • Introduction | 1 |
| Chapter 2 • Installation | 3 |
| Chapter 3 • Touring The MIDI Setup | 5 |
| Chapter 4 • A Quick Tour | 9 |
| Chapter 5 • Playing A Demo Songfile | 19 |
| Chapter 6 • Recording | 27 |
| Chapter 7 • Tools | 39 |
| Chapter 8 • Note Editing | 53 |
| Chapter 9 • MIDI Event Editing | 81 |
| Chapter 10 • Editing Song Parameters | 95 |
| Chapter 11 • Printing Notation | 115 |
| Chapter 12 • The List Editor | 121 |
| Chapter 13 • System Exclusive | 129 |
| Chapter 14 • Accessories | 133 |
| Chapter 15 • The Metronome | 151 |
| Chapter 16 • The Transport Controls | 153 |
| Chapter 17 • Timing, Syncing And Tempo | 159 |
| Chapter 18 • Tempo Mapping | 167 |
| Chapter 19 • Advanced Sequencing | 173 |

TABLE OF CONTENTS

| | |
|--|-----|
| Chapter 20 • Multi-Track Editing | 185 |
| Chapter 21 • Song Construction | 195 |
| Chapter 22 • Mix Maestro | 205 |
| Chapter 23 • Time Line Scoring | 211 |
| Chapter 24 • Create-A-Tool | 215 |
| Chapter 25 • ToolTrays | 223 |
| Chapter 26 • Music Tools | 227 |
| Chapter 27 • The Pattern Tool | 275 |
| Chapter 28 • Media Madness | 287 |
| Chapter 29 • Multi-Media Tools | 301 |
| Chapter 30 • Scales, Chords, Rhythms And Patches | 329 |
| Chapter 31 • Customizing Your Environment | 337 |
| Appendix • Quick Reference | 341 |

Chapter 1

Welcome Aboard!

Thank you for purchasing Bars&Pipes Professional. In the pages to come, you will understand why you've made an important choice. With Bars&Pipes Professional, you're truly bound only by the limits of your own creativity.

We encourage you to read this manual, since it contains thorough explanations of Bars&Pipes Professional's wide array of features.

Bars&Pipes Professional is a high-end MIDI sequencing and composition package. In order to use it, you must have a MIDI sound module or keyboard connected to your Amiga via a MIDI interface.

NOTE → If you would like to use the Amiga's internal sounds instead of MIDI, we offer the Internal Sounds Kit, available at your local dealer, mail order, and directly from Blue Ribbon.

In addition to external MIDI instruments, Bars&Pipes Professional integrates beautifully with the One-Stop Music Shop soundcard, also from Blue Ribbon. The One-Stop Music Shop provides internal 16-bit musical instruments for your Amiga 2000, 3000, or 4000.

Check Your Package

The following items should be included in your package:

- One manual
- Two program diskettes
- One registration card
- One copy of our introductory newsletter

Send In Your Registration Card

Please take a moment to fill out and send in the enclosed registration card. This will assure that technical support, future upgrades or upgrade notices of Bars&Pipes Professional, a free subscription to Quarter Notes (our newsletter), special product announcements and offers, and all the benefits of being a Blue Ribbon customer will be available to you.

CHAPTER ONE

As always, we appreciate your feedback. You may call or write to this address:

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About Blue Ribbon

Everyone at The Blue Ribbon SoundWorks is dedicated to producing the highest quality software and software support in the industry. We have invested thousands of hours of research and development in our products. Much of that time is spent in listening to and learning from people like you.

Blue Ribbon products are designed to be affordable, ongoing investments that are improved and expanded over time. We've provided expansion through program updates and add-on software, such as the Creativity Kit and the Pro Studio Kit. If you are a C programmer, with the Rules For Tools add-on, you can even create your own enhancements to Bars&Pipes Professional!

The Law of Common Sense

For your convenience, we do not copy protect our products. We see no reason to impose such irritating complexities on our customers. We do ask, however, that you refrain from giving out copies of any of our programs.

If, out of excitement and a desire to share a discovery with a friend, you are tempted to do so, please take a moment to consider the vast amounts of energy, talent, time, money and other limited resources involved in creating a program like Bars&Pipes Professional.

We ask that you exercise restraint, common sense and courtesy. Remember that we do have demos of our products available. Treat us and our products as you would want us to treat you if our roles were reversed.

Please also remember that in order for you as an owner to continue to receive the benefits of our ongoing efforts, Blue Ribbon must stay in business! You can help by keeping our products from unauthorized reproduction.

Thank you!

Chapter 2

Quick Installation

Bars&Pipes Professional is easy to install on your Amiga computer. Install it on a hard disk or run it directly from your floppy drive(s).

Hard Disk Installation

To install Bars&Pipes Professional on a hard drive, follow these directions:

1. Make sure that you have at least two megabytes of space left on your hard disk.
2. Place the Bars&Pipes Professional program disk in any floppy drive.
3. Double-click on the Hard Disk Install icon. This runs the hard disk installation procedure.
4. Hard Disk Install asks you to choose which hard drive volume to place Bars&Pipes Professional in. If unsure, select the volume with the most available space.
5. Hard Disk Install creates a drawer named "Bars&Pipes Professional" on the selected volume.
6. Hard Disk Install copies all files and drawers into the Bars&Pipes Professional drawer .
7. When Hard Disk Install finishes, store the Bars&Pipes Professional disks in a safe place.
8. Run Bars&Pipes Professional from the Bars&Pipes Professional drawer on your hard disk.

If you have an earlier version of Bars&Pipes Professional, Hard Disk Install only updates it if the previous version is also kept in a drawer called Bars&Pipes Professional. If your original drawer is named anything other than Bars&Pipes Professional, Hard Disk Install ignores it and creates a new drawer.

Floppy Disk Installation

To install Bars&Pipes Professional on a floppy drive, follow these directions:

1. Place the Bars&Pipes Professional program disk in any floppy drive.
2. Double-click on the Floppy Disk Install icon, then follow the prompts as they appear on the screen.
3. Floppy Disk Install prepares the two Bars&Pipes Professional disk so you can run directly from floppy disk.

CHAPTER TWO

4. Once the Floppy Install is finished, duplicate both Bars&Pipes Professional disks. Please consult your Amiga manual if you have questions.

5. Run Bars&Pipes Professional from the duplicate disks.

If you currently have only floppy disk drives, but plan to purchase hard drives later, go ahead and install on floppy disk, you'll be able to run the Hard Disk Install program later.

★ TIP ★ Although Bars&Pipes Professional does run from floppy disk, we recommend the use of a hard drive when possible.

Chapter 3

Overview

Bars&Pipes Professional works with any MIDI-compatible synthesizer or sound module. Let's look at some standard ways to connect MIDI instruments to your Amiga computer.

The MIDI Interface

In order to use Bars&Pipes Professional, you must first own a MIDI interface. The MIDI interface serves as a translator between your MIDI instrument(s) and your Amiga.

Before using Bars&Pipes Professional, first connect your MIDI interface to your Amiga's serial port.

NOTE → If you've installed extra serial ports in your computer, make sure to connect the MIDI interface to the original serial port.

MIDI Interface Ports

Most MIDI interfaces feature one MIDI in, one MIDI out, and one MIDI thru port. The MIDI in and MIDI out ports are the most important aspects of a MIDI interface.

Multiple MIDI In Ports

Few MIDI interfaces support more than one MIDI in. Those that do require you to set a switch, which in turn selects the currently active MIDI in port. In other words, only one MIDI in is accessible at any given time.

In order to record more than one MIDI instrument simultaneously, you'll need a MIDI merger. Most MIDI instrument dealers sell MIDI mergers. Your MIDI interface only needs one MIDI in port to take advantage of a MIDI merger.

NOTE → The One-Stop Music Shop sound card provides an additional MIDI interface to the one on your serial port, thus enabling Bars&Pipes to record from two simultaneous MIDI instruments without the need for a MIDI merger.

Multiple MIDI Out Ports

Some MIDI interfaces have more than one MIDI out. Most of these interfaces send the same data out all MIDI outs, providing the normal 16 MIDI channels on all MIDI outs simultaneously.

CHAPTER THREE

The Triple Play Plus MIDI Interface

The Triple Play Plus interface, on the other hand, has three separately addressable MIDI outs, providing 16 MIDI channels on each MIDI out, for a total of 48 MIDI channels simultaneously.

The One-Stop Music Shop

In addition to 16-bit multi-timbral stereo sound, the One-Stop Music Shop soundcard provides a built in MIDI interface. You can use its MIDI interface to increase the number of simultaneous MIDI inputs and outputs, or to free the Amiga's standard serial port for other applications (such as modems and laser disk controllers.)

Please call or write to Blue Ribbon for a free brochure on the Triple Play Plus and/or the One-Stop Music Shop.

Connecting One MIDI Device

If you own only one MIDI device, follow these steps to connect it to your Amiga:

1. In order to both playback and record, you need two MIDI cables. Connect one end of the first MIDI cable to the MIDI out of your keyboard, then connect the other end of the same cable to the MIDI in of your interface. MIDI information will flow out of your keyboard, down this cable, and into your interface so that you can record with Bars&Pipes Professional.
2. Connect one end of the second MIDI cable to the MIDI in of your keyboard, then connect the other end of the second cable to the MIDI out of your interface. MIDI information will flow out of your interface, down the cable, and into your keyboard to produce sound.

NOTE → In this configuration, it is sometimes possible to create a MIDI "feedback loop." Such a loop occurs when notes leave the keyboard, enter the Amiga, exit the Amiga's MIDI Out connector, go back into the keyboard, then get passed back to the Amiga again. If you experience this problem, consult your keyboard's manual to learn how to disable this feature.

Connecting Two MIDI Devices

If you own both a MIDI keyboard and a separate MIDI sound module, drum machine, or other MIDI device, choose from the following instructions, according to your desired configuration:

Using The Keyboard Solely As An Input Device

1. If you want to use the sound module to produce sound the keyboard solely for performance input, you'll need two MIDI cables. Connect the first cable so that it connects the MIDI out of your keyboard to the MIDI in of your Amiga's MIDI interface.
2. Connect the second cable so that it connects the MIDI out of your interface to the MIDI in of your sound module.

Using The Keyboard As Both An Input Device And Sound Module

1. If you want to produce sound with both the keyboard and the sound module on different MIDI channels, you'll need three MIDI cables. Connect the first cable from the MIDI out on your keyboard to the MIDI in on your interface.
2. Connect the second cable from the MIDI out on your interface to the MIDI in on your keyboard.
3. Connect the third cable from the MIDI thru on your keyboard to the MIDI in on your sound module.

NOTE → If your keyboard doesn't have a MIDI thru, you can try connecting the second cable from the MIDI out on your interface to the MIDI in on your sound module, and the third cable from either the MIDI out or MIDI thru on your sound module to the MIDI in on your keyboard.

4. Set up your sound module to receive on different MIDI channels from your keyboard.

Connecting More MIDI Devices

If you own more than two MIDI modules or keyboards, a multiple out MIDI interface provides the most versatile solution. If your studio requires more than 16 MIDI channels, consider the Triple Play Plus MIDI interface, or the One-Stop Music Shop with its built in MIDI interface

If you do not own either Triple Play Plus or the One-Stop Music Shop, you can daisy-chain your MIDI devices together. In other words, connect the MIDI thru of each MIDI device in the chain to the MIDI in of the next device.

NOTE → Remember, each instrument must be set to play on different MIDI channels.

You can also connect and route MIDI devices by using a MIDI patch bay. See your local instrument dealer for more information on MIDI patch bays.

CHAPTER THREE

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Chapter 4

Introduction

Bars&Pipes Professional is an innovative composition environment with an extensive arsenal of features and options. Before exploring it in depth, let's take a quick tour!

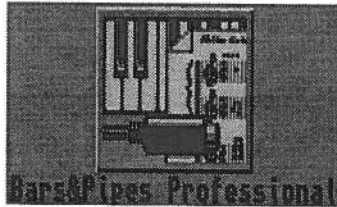
NOTE → If you need help connecting your MIDI equipment to your Amiga, please read the previous chapter, *Touring The MIDI Setup*.

Running Bars&Pipes Professional

Before you run Bars&Pipes Professional, you must first install it. If you have not yet done so, please see Chapter 2, *Installation*.

Running From The Workbench Icon

You can run Bars&Pipes Professional from Workbench by double-clicking on its program icon.



Doing so opens Bars&Pipes Professional with an empty Song. Alternatively, you can double-click on a Bars&Pipes Song icon. Doing this opens Bars&Pipes Professional with the selected Song already loaded.

Running From A Shell

You can also run Bars&Pipes Professional from a shell. Make sure your stack size is at least 20,000 bytes when running the program this way.

The Default Screen Setup

When Bars&Pipes Professional first starts up, you'll see the Tracks window and a group of icons along the right side of the screen. These icons represent various unopened windows.

Double-click on any icon to open its associated window. Click on the close button in the top left corner of an open window to revert it to its associated icon.

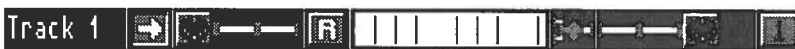
CHAPTER FOUR

The Tracks Window

The Tracks window represents the heart and soul of Bars&Pipes Professional. It is where multi-track recording takes place. It is also the primary place for organizing the PipeLines and Tools which give Bars&Pipes Professional so much of its power and flexibility. Let's take a brief look:

The PipeLine

The Tracks window contains individual Tracks, into which you will record your music. These Tracks run from left to right in rows, with measure and beat lines drawn from top to bottom.



Starting from left to right, each Track contains the following components:

- The Track Name, which identifies a particular Track;
- The Input Selector box, or Input Arrow, which selects which Track(s) are to receive incoming music;
- The Input PipeLine, which holds Tools that process the music as it flows into the Sequencer;

NOTE → When first running Bars&Pipes Professional, you will most likely see a MIDI In Tool in the Input PipeLine. This acts as the source for the Track's PipeLine, and, hence, the Track. This is further explained in Chapter 6, Basic Recording.

- The Play/Merge/Record Selector, which displays a blue letter P while the Track is in Play mode, a red letter M while the Track is in Merge mode, and a red letter R while the Track is in Record Mode;
- The Sequencer area, which holds and displays the MIDI events, or Sequence, that make up the recording;
- The Thru/Play Only/Mute Selector, or faucet, which switches the Track between Thru, Play Only, and Mute modes;
- The Output PipeLine, which holds Tools such as the MIDI Out Tool that process the music as it flows out of the Sequencer; and
- The MIDI Channel Selector, or Output channel, which displays the MIDI channel over which the final MIDI Out Tool sends.

NOTE → This selector is used by the standard MIDI Out Tool, and other MIDI Tools including the Triple Play Plus MIDI Out and One Stop Music Shop MIDI Out

Tools. On the other hand, non MIDI-specific output Tools, such as most Multi-Media Tools, do not need MIDI channels.

The Flags Area

Above the Tracks area is the Flags area.



Bars&Pipes Professional uses these flags to mark specific points in music time for certain operations, such as punch in and auto-locate. It also displays the current time signature and measure numbers in this area.

Bars&Pipes Professional displays twelve Flag icons across the top of the Tracks. You can grab these with the mouse and drag them from left to right. Use the Flags to set positions in your music for editing, recording, looping, and more.

A Flag appearing during the displayed section has an attached vertical stem intersecting all of the Tracks. If you've placed the Flag in a measure which precedes the displayed section, it appears on the left side of the Sequencer. If you've placed it in a measure that follows the displayed section, it appears on the right.

To relocate a Flag, first scroll the Sequencer so that the desired location shows in the Sequencer. Then drag the Flag to its position. To move a Flag to the beginning of the Song, drag it all the way to the left side of the screen. To move it to the end of the Song, drag it all the way to the right. Flags snap to the alignment specified in the Align with... option in the Preferences menu.

The following Flags are found in the Flags area:

- The Position Marker Flag or Song Position Flag (the red triangle with the blue border) which shows the current position in your Song;

NOTE → If you press the Play button, your Song starts at this point.

- The two Edit Flags (solid purple triangles), which determine the part of your Song that is affected by Cut, Paste, and other editing operations;
- The Auto-Locate Flags (blue rectangles marked M1 through M4), which mark important points in your composition;

NOTE → You can immediately move to these points by using the corresponding M1 through M4 buttons in the Transport Controls window.

- The Punch In and Punch Out flags (yellow rectangles marked IN and OUT), which allow you to record over a restricted part of your Song;

CHAPTER FOUR

- The Loop Flags (red rectangles containing curved lines with arrows), which mark sections for use with Loop-Mode editing and the Loop Tool; and
- The Stop Sign (the red hexagon with the white border), which marks the point at which Bars&Pipes Professional is to stop playback.

NOTE → This feature is useful when you want to sit back and listen to part of a Song while you're away from the keyboard, or if you're performing live or recording a sequence to tape and want the Song to stop upon completion.

Control Buttons

The Tracks Window's control buttons are above the Flags area.



From left to right are the following buttons:

- The Solo button, which both chooses and displays whether the highlighted Track is soloed, muted, or neither;
- The ToolPad, which holds up to sixteen Tools to be used with the Toolize feature;
- The Group selector buttons, which identify combinations of Tracks;
- The Group button, which determines if clicking on a Track adds to a group or not;
- The Up/Down arrows, which move the highlighted Track up or down in the list of Tracks;
- The Tempo button, which chooses and displays the current tempo;
- The Start button, which starts the Sequencer from the beginning of your composition;
- The Play button, which starts the Sequencer from the current Song position, denoted by the red and blue triangular Song Position Flag, found in the Flags Area;
- The Rewind button, which moves the Song Position Flag to the left, toward the beginning of the piece;
- The Fast Forward button, which moves the Song Position Flag to the right, toward the end;
- The Measure display, which shows the measure number in which the Song Position Flag currently resides; and

- The Record button, which chooses and displays whether the Sequencer is in record or playback mode.

Sizing And Scrolling The Tracks

Use the scroll bar and arrows on the right side of the Tracks window to scroll through the Tracks, in order to view those which don't fit in the display.

At the bottom of the Tracks window, you'll find a set of scroll bars, single arrows, and double arrows. Use the scroll bar and single arrows to search forward and backward. For example, to scroll the Track names from left to right, use the scroll bar and single arrows below the list of Track names.

Use the double arrows to resize sections of the display by dragging the arrows from left to right. With the double arrows, you can resize your display to show only what you want to view.

NOTE → By running Bars&Pipes Professional in Interlaced mode, you can double the number of Tracks displayed. To do so, select Environment from the Preferences menu, and select Interlace Screen. This redraws the screen and doubles the vertical resolution, which provides plenty of room for additional Tracks.

The Main Menu

As you may know, in the Amiga's windowing environment each window can have a different menu. Some of the windows in Bars&Pipes Professional do have their own menus, however, most share one menu, the Main menu.

To access the Main menu, click on the Tracks window or the background with the left mouse button. Then, to select one of the Main menu options, click and hold the right mouse button, while moving the mouse pointer to your desired selection.

Window Icons and the Windows Menu

Several windows in Bars&Pipes Professional are accessible from both icons, located at the right side of the screen, and menu commands, located in the Windows menu found in the Main menu set.

Window Icons

To the right of the Tracks window, you'll see a column of icons. These icons represent various windows. Double-clicking on an icon opens the window, while clicking on the close gadget of a window turns it back into an icon

CHAPTER FOUR

NOTE → The Tracks window itself can be closed and turned into an icon. To do so, click on the close gadget in the upper left hand corner of the Tracks window. The close gadget looks like a square with a smaller square inside of it. Notice that the Tracks window turns into an icon of railroad Tracks. Double-click on the Tracks icon to reopen the window.

The Windows Menu

Each window can also be accessed from the Windows menu in the Main menu. This includes many additional windows that do not have icons. Let's take a quick tour of all the windows in the Windows menu. As we do this, we'll get a quick glimpse of the various capabilities of Bars&Pipes Professional. Open each window by selecting it in the Windows menu. If a window has an icon, notice that the icon disappears. Close the window by clicking on its close button (top left.) You might also experiment with double-clicking on the window icons to become familiar with each.

Accessories

Accessories are separate modules that add new features to Bars&Pipes Professional. Use the Accessories window to install, use and remove your Accessories. The Accessory window may also be opened by double-clicking on its icon.

Clipboard

When the Clipboard window is open, cut copy and paste editing operations store and retrieve from it. Use this to move music around between different parts of the program. The Clipboard window may also be opened by double-clicking on its icon.

Define...

You can define your own Scales, Chords, Rhythms, and Patch Lists using the four Define windows opened from the submenu.

Edit PadTool Controls

If you have a Tool in the ToolPad, the Edit PadTool Controls command opens the Control window for that Tool.

Icons

The Icons window allows you to keep all of the window icons in their own separate window. Opening the Icons window automatically collects the window icons and places them inside the Icons window. Closing the Icons window causes the window Icons to return to their previous positions.

Information

The Information window provides useful information about the state of your project and computer. The Information window may also be opened by double-clicking on its icon.

Master Parameters

The Master Parameters window accesses a special master Track where you may set up global Time Signature, Lyrics, Scales, Chords, Dynamics, and Rhythm changes. The Master Parameters window may also be opened by double-clicking on its icon.

Media Madness

The Media Madness window brings multi-media production to Bars&Pipes Professional. With this window, you can place Multi-Media Tools in each Track, and edit a complete Multi-Media presentation. The Media Madness window can also be opened by double-clicking on its icon.

Metronome

Use the Metronome window to set up your metronome click - internal Amiga audio, MIDI or visual. The Metronome can also be opened by double-clicking on its icon.

Mini Transport

The Mini Transport window provides a subset of the main Transport Controls window (see below.) It's designed to be small and innocuous. You can open it from anywhere simply by pressing the 'M' key on your keyboard.

Mix Maestro

Use Mix Maestro to do a complete automated mixdown of your performance. Mix Maestro provides a volume slider and pan pot for each Track. As the Song plays, drag the slider to lower or raise the volume and turn the knob to rotate the sound left or right. Mix Maestro memorizes your moves and plays them back faithfully. The Mix Maestro window can also be opened by double-clicking on its icon.

Record Activation

By default, when Bars&Pipes Professional's Sequencer records into a Track, it erases all MIDI event types (note, pitch bend, etc.) and replaces them with the new. However, with the Record Activation window you can tell the Sequencer to ignore specific MIDI types. For example, you can set it to record over pitch bend while leaving notes intact. The Record Activation window may also be opened by double-clicking on its icon.

CHAPTER FOUR

Set Flags

The Set Flags window allows you to position any Flag in the Track's window by typing in the location you want for the Flag, either in music or SMPTE time. Open the Set Flags window by choosing Set Flags from the Main menu's Windows menu, or double-click on the Set Flags icon.

To determine music time or SMPTE time, click on the SMPTE/Music Time button. To change the Flag, click on the numbers to the right of the Flag representation.

Song Construction

Edit your music at the highest level with the Song Construction window. Create, drag, duplicate and erase everything from individual measures to entire sections. The Song Construction window can also be opened by double-clicking on its icon.

Tempo Map

Use the Tempo Map window to create a graphical Tempo Map for your performance. With a Tempo Map, you can tell Bars&Pipes Professional when to speed up and slow down as it plays your music. The Tempo Map window can also be opened by double-clicking on its icon.

Tempo Palette

You may set four preset Tempos in the Tempo Palette window, and then switch instantly to any one at any time. The Tempo Palette can also be opened by double-clicking on its icon.

Time Line Scoring

Connect several Songs into one performance on a SMPTE time line using the Time Line Scoring window. This is useful for laying out an extended piece where different Songs occur at different times. The Time Line Scoring window can also be opened by double-clicking on its icon.

ToolBox

The ToolBox window displays several rows of square icons. These represent Tools. Each Tool can be placed in a Track's PipeLine where it performs a specific task to the MIDI music as it flows through the pipe. To place a Tool in a PipeLine, click on the Tool with the left mouse button, and, while holding the button down, drag the Tool to the destination Track's PipeLine. Although the ToolBox displays a palette of available Tools, you may install more Tools, create your own Tools, as well as remove Tools from Bars&Pipes Professional, thereby changing the collection of available Tools in the ToolBox. The ToolBox can also be opened by double-clicking on its icon.

Tracks

This command opens the main Tracks window, which is also accessed by double-clicking on its icon.

Transport

This window provides the complete set of commands to control the movement of Bars&Pipes Professional's Sequencer. Notice that the Transport window duplicates many of the commands found in the top of the Tracks window as well as all the commands in the Mini Transport. You may click on identical buttons to achieve identical results. The Transport Controls window displays the current time in music time (Measures, Beats and Clocks) as well as SMPTE time (Hours, Minutes, Seconds and Frames.) It also adds additional buttons for using the Punch and Loop Flags as well as setting and using all of the Flags. The Transport window can also be opened by double-clicking on its icon.

CHAPTER FOUR

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Chapter 5

Getting Ready to Play

In this chapter, we'll play one of the demo Songs provided on your Bars&Pipes Professional disk. Before we play the Songfile, however, let's make sure that Bars&Pipes Professional is set up properly.

NOTE → Make sure that your MIDI equipment is setup properly.

The MIDI Out And Quick Patch Tools

The MIDI Out Tool must be loaded in order for Bars&Pipes Professional to play music via a standard MIDI interface. The MIDI Out Tool's job is to send notes out of the Sequencer to your MIDI instrument.



When you first run Bars&Pipes Professional, you should see a MIDI Out Tool at the end of each and every PipeLine, unless you've set up your environment differently (more on this later).

NOTE → You'll probably also see the MIDI In Tool at the beginning of each PipeLine. We won't need the MIDI In Tool until we're ready to record MIDI in the next chapter. It doesn't hurt to have it in the PipeLine, though.

We also recommend using the Quick Patch Tool when playing a Songfile.

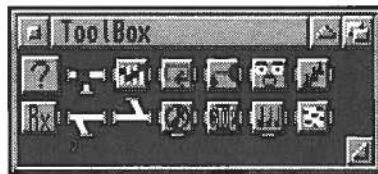
The Quick Patch Tool allows you to easily change patches, or sounds, on your MIDI instrument.



The demo Songfiles provided with Bars&Pipes Professional already contain this Tool in their PipeLines. Please refer to the Tools chapter of this manual for more information on the Quick Patch Tool.

Installing The MIDI Out And Quick Patch Tools

If you don't see the MIDI Out Tool at the end of every PipeLine, open your ToolBox by either double-clicking on the ToolBox icon, or choosing ToolBox from the Windows menu.



Do you see the MIDI Out Tool in the ToolBox? You can click down on the Question Mark button to bring up a pop-up list of Tool names. Is the MIDI Out Tool listed?

CHAPTER FIVE

If not, you need to install the MIDI Out Tool. Follow these steps to load the MIDI Out Tool:

1. If the ToolBox window isn't open, open the ToolBox.
2. With the ToolBox window still active, use the right mouse button to access the ToolBox menu and select Install Tool....
3. A file requester will appear. You should see a list of Tool names. If not, there should be a Tools directory in the Bars&Pipes Professional directory. Direct the file requester to this directory to find all of the Tools.
4. Once inside the Tools directory, find the MIDI Out Tool. Click on MIDI Out once and select Load, or just double-click on MIDI Out.

The MIDI Out Tool will appear in your ToolBox. From now on each time you run Bars&Pipes Professional, it will automatically load the MIDI Out Tool into the ToolBox. You won't have to perform these steps again unless you Remove the Tool from your ToolBox.

NOTE → Bars&Pipes Professional keeps Track of which Tools are in the ToolBox by a text file called Tools. This file resides in either your S: directory on your WorkBench disk or System partition, or, if the directory "Support" exists in your Bars&Pipes Professional directory, in the Support directory.

As you did with the MIDI Out Tool, look in the ToolBox for the Quick Patch Tool. If it isn't in your ToolBox, install it as you did the MIDI Out Tool.

The Song Menu

The Song menu is the first menu in the Main menu set. Activate the Tracks window by clicking within it to access the Main menu set.

Although we won't be using most its commands right away, now is a good time to introduce the Song. The Song menu contains commands that create, load, and save entire compositions, as well as exit Bars&Pipes Professional. The Song menu commands are:

New

The New command begins a new composition. If you have made any changes to the current composition, Bars&Pipes Professional will ask if you'd like to save them before closing. Choosing Yes saves the current Song, while choosing No disregards any changes you have made since the last save. Choosing Cancel cancels the New operation and returns you to the current Song.

If a 'New.Song' files exists, Bars&Pipes Professional loads it. Otherwise, Bars&Pipes Professional create its own default blank Song.

PLAYING A DEMO SONGFILE

NOTE → Use the **Save As Default** command (see below) to create and update the **New.Song** file.

Load...

The **Load...** command loads a previously saved Song. If the Song's Tracks, ToolTrays, or ToolPad contain Tools that aren't loaded in the ToolBox, Bars&Pipes Professional attempts to load the missing Tools. If Bars&Pipes Professional can't find a Tool, a requester appears to give you the opportunity to load the Tool manually.

Revert

The **Revert** command returns the Song to its condition at the most recent save, by loading the last Song saved to disk. Think of **Revert** as a powerful **Undo** command. At regular intervals during the composition process, save your Song with the **Save** command. Then, if you make a mistake, you can use the **Revert** command to return to an earlier version of your Song.

Save As...

The **Save As...** command either saves your Song for the first time or saves it as a different file name. When you select this command, a file requester opens, which enables you to create a new file or to select an old one to overwrite. Once you save a Song with the **Save As...** command, Bars&Pipes Professional recognizes the file name. From then on, you can use the **Save** command instead.

Save

The **Save** command saves your Song to disk. This command works only if a file has been previously saved or loaded from disk. Once you load a Song or save it with the **Save As...** command, you can use the **Save** command without bothering with the file requester.

Save As Default

The **Save as Default** command saves the current Song as the default Song. Whenever you run Bars&Pipes Professional, this Song automatically loads as your initial blank Song. Also, whenever you choose **New** from the Song menu, this Song loads as the initial template.

Print

The **Print** command prints your Song. When you select **Print**, Bars&Pipes Professional opens the **Print** requester that allows you to print the entire score. (Please refer to Chapter 11, **Printing Notation**)

Title/Author

The **Title/Author** command opens a requester into which you can enter the Song's title and author.

CHAPTER FIVE

Length...

The Length... command sets the overall length of your Song. Bars&Pipes Professional sets all of its scroll bars to accommodate the new length.

Disable/Enable MIDI

When MIDI is enabled, the Disable/Enable command displays as "Disable MIDI" in the Song menu. When you select Disable MIDI, Bars&Pipes Professional disconnects the MIDI In Tool from the Amiga's internal serial port, so that another program can access the port. When MIDI is disabled, this command displays as "Enable MIDI" in the Song menu. Choose Enable MIDI to reconnect the MIDI In Tool.

Propagate

The Propagate command, in conjunction with the Song Construction window's A-B-A feature, copies changes made to the first instance of each section to all other instances of those sections. The Propagate command is ghosted if the A-B-A feature has not been utilized.

About

The About command brings up a requester with version and copyright information.

Quit

The Quit command exits Bars&Pipes Professional and returns to Workbench. Bars&Pipes Professional will ask you if you'd like to save your file before exiting.

Loading an Example Song

Let's load the Brandenburg Demo and play it.

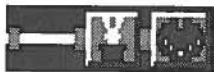
1. Select Load... from the Song menu. The file requester appears.

NOTE → If you can't find the Song menu, it is probably because another window's menus are active. Click on the Tracks window to activate the Main menu set.

2. Find the Song titled "Brandenburg Demo." It's in the Example Songs directory.
3. Load the Song by either double-clicking on its file name, or clicking once on its file name and selecting Load. Bars&Pipes Professional loads the Song.

Notice that the Tracks window displays seven Tracks. The Track names correspond to the name of the instrument that each Track plays.

Look at the Output PipeLine of each Track:



You'll see the Quick Patch Tool, followed by the MIDI Out Tool, followed by the MIDI Channel number.

Setting Your MIDI Channel Numbers

On the far right of each Track, notice a blue number denoting the MIDI Channel number for the Track. This number tells Bars&Pipes Professional through which MIDI Channel to play the Track.

The Brandenburg Demo performs on MIDI Channels one through seven; each Track is associated with a different MIDI channel. The result is a multi-timbral performance, since each Track plays with a different sound, or timbre.

NOTE → Please check your synthesizer manual to make sure that it is capable of playing multi-timbrally and receiving on these seven MIDI channels simultaneously. Also, please refer to the chapter "About MIDI" for more information on MIDI channels and MIDI synthesizers.

If your synthesizer isn't able to play multi-timbrally, all seven Tracks will sound like the same instrument. If your synthesizer can play multi-timbrally, but can't receive on MIDI channels one through seven simultaneously, you'll need to change the MIDI channel number for each Track:

To change a Track's MIDI channel, click on the MIDI channel number. A pop-up grid appears. Highlight the MIDI channel on which you want the Track to output MIDI, and then lift the mouse button.

Selecting Your Patch Changes

The Quick Patch Tools at the end of each Track send out Program Changes, or patches, to your MIDI instrument. These patches set up your synthesizer to play the correct sound on each MIDI channel. Each Quick Patch Tool in the Brandenburg Demo is configured to send patch changes that will sound correct on General MIDI instruments.

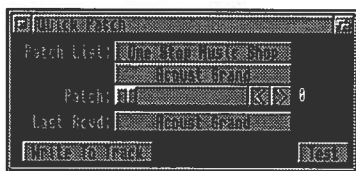
If your synthesizer or sound modules supports the General MIDI patch list, then skip to the next section, Playing the Songfile.

If your synthesizer isn't set up to play General MIDI patches, the Brandenburg Demo might sound funny. To make it sound better, you'll

CHAPTER FIVE

need to change the patch numbers in the Quick Patch Tool. To do so, double-click on the Quick Patch Tool in one of the Tracks.

The Control window for the Quick Patch Tool opens:



As with all Tools, each Quick Patch Tool has its own Control window, so that you can set up different patches for each one. Drag the slider to change instruments and Quick Patch plays test notes so you can hear how each instrument sounds.

Above the slider, Quick Patch displays the name of the currently selected patch. This name is only valid for a General MIDI synthesizer. If you have a different configuration, you can change the names in the Patch List by using the Define Patch List window.

NOTE → We'll learn about defining Patch Lists later. For now, don't worry, just drag the slider until you get an appropriate sound.

Once you've selected the instrument of your choice, close the Control window to get it out of the way, or leave it open in case you'd like to continue trying different instruments while the music plays.

At this point, you may have a few questions:

- What if more than one Track is set to the same MIDI channel? If that's the case, will both Tracks play?
- And, if there is a Quick Patch Tool on every Track, which patch will be selected for that MIDI channel?

Good questions!

First of all, Bars&Pipes Professional plays both Tracks. They'll be performed by the same instrument, since they share the same MIDI Channel.

Second, only one Quick Patch Tool can determine what instrument your synthesizer will use. Since Bars&Pipes Professional performs the Tracks in order from top to bottom, the Quick Patch on Track 2 will override the Quick Patch one Track 1

NOTE → Remember, we're referring to two Tracks that share the same MIDI channel number. Quick Patch will not override any other Tracks.

Playing the Songfile

If you've followed along from the beginning of this chapter, loaded the Brandenburg Demo, and set channel numbers and the Quick Patch Tool for each Track, then it's time to hear the Brandenburg Demo!



To start the sequence from the beginning, click on the Start button (blue square followed by a triangle) at the top of the Tracks window or in the Transport Control window:

Another way to start the sequence from the beginning is to press the 0 (zero) key on your numeric keypad.

You should hear your synthesizer playing the music. Notice a blue vertical line scrolling across the Tracks in the Tracks window. This is the Song Position Line.

NOTE → As the Song Position Line passes over the beginning of a note, that note sounds. As it passes over the end of a note, that note becomes silent.

If your synthesizer does not play, check your cables, amplifier, and MIDI interface. Refer to Chapter 3, *Touring The MIDI Setup* if you need more help. Also, review the beginning of this chapter to make sure that you didn't miss a crucial step.

Saving Your Changes

If you've made any changes to the Brandenburg Demo, for example the MIDI channel numbers or the Quick Patch settings, you should save the Brandenburg Demo so that it will play the same way next time.

Select the Save command from the Song menu. This tells Bars&Pipes Professional to update the Brandenburg Demo with your new changes.

CHAPTER FIVE

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Chapter 6

Recording Checklist

Before we begin recording, let's make sure that everything is ready to go.

Select The New Song Command

Select New from the Song menu. This command clears the Tracks and PipeLines of all data and Tools, except the MIDI In and MIDI Out Tools.

NOTE → You can set Bars&Pipes Professional to load a custom environment whenever you select the New menu option. Simply set the Tracks and Tools the way you'd like them to be when you need a fresh slate, then select the Save As Default menu command from the Song menu.

Verify The MIDI In Tool

The MIDI In Tool absolutely must be installed in order to record from a MIDI source. The MIDI In Tool can only be placed at the beginning of the Input PipeLine:



It's the MIDI In Tool's job to listen to the MIDI In port, and send the MIDI data down the PipeLine to be processed by other Tools and recorded in the Sequencer. If you don't see a MIDI In Tool at the input of each Track, load it in just like you did with the MIDI Out Tool in the last chapter.

Configure The Metronome

The Metronome provides a solid reference click to help you keep time while recording. It can also give you a count-down click for a few measures before recording, so that you have time to prepare. If you'd like, the Metronome can also click during playback.

You can set Bars&Pipes Professional's Metronome to play out of the Amiga's internal sounds, flash the screen, and/or play out of your MIDI instrument.

To open the Metronome window, double-click on the Metronome icon or select Metronome from the Windows menu. Like all Bars&Pipes Professional windows, you may leave this window open and change its parameters as the music plays.

Please refer to Chapter 15, The Metronome, for further details.

CHAPTER SIX

Set Your Keyboard's Local On/Off Switch

If you have a single keyboard connected to your computer, so that MIDI Out of the keyboard is connected to the MIDI In on the computer and MIDI Out on the computer is connected to the MIDI in on the keyboard, you may want to use the keyboard's "local off" feature.

Many keyboards support a local on/off switch. Here's why:

When the local setting is switched on, the sound producing hardware of your keyboard performs as soon as you press a piano key. Meanwhile, the keyboard also sends a MIDI note command down the MIDI cable. This can create a problem when the keyboard is connected to a computer. The computer receives the MIDI note, then sends it back to the keyboard via the second MIDI cable. Unfortunately, this tells the keyboard to play the same note a second time, stacked on top of the first.

When local is switched off, the sound producing hardware in your keyboard only responds to MIDI notes coming from the computer. It doesn't make a sound when you press a key. However, it still sends the note via MIDI to your computer which sends the note back via the second MIDI cable into the sound producing hardware which can now respond.

Test Run

Click on the Input Selector of Track 2.



The Input Selector is the grey box to the right of the Track name. A red arrow should appear in the box. This indicates that all MIDI input should flow down Track 2.

NOTE → If the red arrow doesn't appear, you probably don't have the MIDI In Tool installed in Track 2.

With your keyboard's local setting on, play a key. If your keyboard is multi-timbral, and is set up to receive on MIDI channel 2, and MIDI channel 2 is set up to play a different patch than MIDI channel 1, you should hear two distinct sounds simultaneously.

This is because your keyboard's sound producing hardware is receiving the command to play from two sources. One, pressing a key on your keyboard tells your sound hardware to play on MIDI channel 1. Two, the MIDI information sent out of the MIDI out, goes through Bars&Pipes Professional's Track 2, and returns to the sound producing hardware on MIDI channel 2.

Now, turn your keyboard's local off and play a key. You'll only hear the MIDI channel 2 patch. This is because the sound producing hardware is only receiving the command to play from MIDI, and not directly from the key press itself.

When recording or overdubbing multi-timbrally, it is best to set your keyboard's local off.

Recording Two Tracks

Although Bars&Pipes Professional is a sophisticated music environment, you'll find that you can accomplish wondrous things simply by recording a few Tracks. Let's walk through the steps of the recording process:

Step One: Turn On The Metronome

If you haven't already done so, turn on the Metronome from the Metronome window. If you record with the Metronome, you'll find it much easier to edit your music later on, because the notes will line up properly with the measures and beats.



Test the Metronome by clicking on the Play button.

You should hear the metronome's click. If not, please refer to the Metronome chapter to learn how to set up Bars&Pipes Professional's metronome.

Step Two: Set The Tempo

While testing the Metronome, click on the Tempo display in the Tracks or Transport window and drag it with the mouse.



Drag up to increase the tempo, drag down to decrease the tempo. You can also click once in the top half of the tempo button to increase the tempo by one or click once in the bottom half of the button to decrease by one. Once you've settled on a comfortable tempo, click on the Stop button.

★ TIP ★ You may also set the tempo with the Tempo Tap Tool. Please refer to the Music Tools chapter for more information.

Step Three: Activate The Input Selector

Click on the Input Selector for the Track you want to record. The Input Selectors are the gray boxes in front of the MIDI In Tools.

When you click on the Input Selector, a red arrow appears.



CHAPTER SIX

If the red arrow doesn't appear, you'll need to load in the MIDI In Tool and select New from the Song menu.

Step Four: Set The Track's Record/Play/Merge Selector

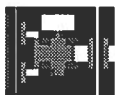
Click on the Track's Record/Play/Merge Select button until it displays a red "R," to put the Track in Record mode.



A red "R" indicates that it is in Record mode. A blue "P" indicates Play mode, while a red "M" indicates merge mode.

Step Five: Place The Track In Thru Mode

By default, Bars&Pipes Professional places each Track in Thru Mode. To switch among Thru, Mute, and Play Only, click on the faucet to the right of the Sequencer display.



When a Track is in Thru mode (depicted by a faucet with two connections on the left) you can hear notes played via your MIDI sound module or keyboard as you play them into the Sequencer.

When a Track is in Play Only mode, notes input from the keyboard can't be heard.

★ TIP ★ If you are using only one keyboard and it does not support Local Off, you might want to record with the faucets in Play Only instead of Thru mode.

Step Six: Select The Output Channel

Depending on which MIDI instrument you use, set the Output Channel so that the synthesizer or device responds with the proper instrument.

The Output Channel selector is to the right of the Output PipeLine:



To select the Output Channel, click down with the mouse and drag it to the desired channel number in the pop-up menu.

NOTE → The MIDI Out Tool must be the last Tool in the PipeLine; otherwise, the notes won't be sent out the MIDI cable.

Test your selection by playing a note on your MIDI keyboard. Notes enter the MIDI Tool on the left side of the PipeLine, pass through the Sequencer,

and exit the MIDI Out Tool direct to the instrument indicated by the selected Output Channel.

- ★ TIP ★ Make sure that you're thoroughly familiar with how to operate your MIDI synthesizer in particular, how to set the MIDI channels for receiving.

Step Seven: Put The Sequencer In Record



Click on the Record button in the Transport Controls window or at the top of the Tracks window to activate the Sequencer Record mechanism.

- ★ TIP ★ You can use the 'R' key on your Amiga keyboard to toggle in and out of Sequencer Record mode.

In Sequencer Record mode, all Tracks that have their Record Select buttons set to "R" record the MIDI music flowing in their Input PipeLines, replacing whatever was there previously. Tracks set to P continue to perform, without recording. Tracks set to M play while recording, merging the new performance with the previous material already in the Track.

It is important to understand the distinction between the Sequencer Record and Track Record modes: When you click on the Record button at the top of the Tracks window, Bars&Pipes Professional enters Sequencer Record mode. Only then can a Track in Track Record mode be overwritten. Otherwise, it simply acts as if it were in Play mode.

When you start Bars&Pipes Professional with either the Start or Play buttons after activating Record mode, Bars&Pipes Professional records MIDI data into the Tracks in Track Record or Merge modes.

This two-step operation is analogous to pressing the Record and Play buttons simultaneously on a hardware multi-track recorder.

- NOTE → Track Record mode allows you to determine which Tracks actually record MIDI data. Only tracks with their R/P/M selectors set to Record or Merge modes actually record when Bars&Pipes Professional is put into sequencer record mode. This feature allows you to determine which Tracks actually record MIDI data and which Tracks only play back.

Understanding the relationship between the Track Record mode and the Input Selector is important. Please keep in mind the following points:

- The Input Selector indicates which Track is currently selected for keyboard input.
- The Input Selector must be set to the same Track on which you want to record, and that Track must be placed in Track Record mode.

CHAPTER SIX

- If you first set the Input Selector for a given Track, and then set that same Track to Track Record mode, changing the Input Selector to another Track also changes the new Track to Track Record mode, and cancels Track Record mode in the previous Track.
- It's a good idea to get into the habit of selecting your options in the Tracks Window from left to right, since Bars&Pipes Professional was designed from the ground up to present you with all information logically as it would be encountered if you were viewing a flow chart.

Step Eight: Start Recording

To begin recording, click on the Start button.

- ★ TIP ★ You can also use the Insert key on the numeric keypad on your Amiga keyboard. The Insert key is the same as the zero (0) key.

When you are finished recording, click on the Stop button or press the Enter key on the numeric keypad on your Amiga keyboard.

- NOTE → Notice that the Sequencer Record button turns off, but the Track Record button stays on. This is a safety feature. It enables you to immediately review your recording without fear of erasing it.

Step Nine: View The Recording

When you stop recording, Bars&Pipes Professional redraws the Sequencer display with the current measure in the center and the Song Position Flag over it. It displays notes as blue lines in selected Tracks and as yellow lines in unselected Tracks.

To view an earlier section, drag the scroll bar below the Sequence section of the Tracks to the left, or to scroll one measure at a time, click on the left arrow.



To view a later section, drag the scroll bar to the right or click on the right arrow.

Step Ten: Play The Recording

Because the Sequencer Record button is no longer activated, you can safely play back your recording even though the Track is still in Record mode. Tracks in Record mode will not record or be erased if the Sequencer is in Sequencer Play mode.

- NOTE → If you have trouble with playback, refer to the previous chapter, Basic Playback.

To play from the beginning, click on the Start button or press the Insert key on the numeric keypad on your Amiga keyboard.

To play from the current Song position, click on the Play button or use the Enter key on the numeric keypad on your Amiga keyboard.

You can also use the Start and Play buttons in a similar fashion when Bars&Pipes Professional is in Sequencer Record mode, in order to record from the beginning of the composition or from the current Song position, respectively.

If you are dissatisfied with what you hear, you can record a second time by clicking on Sequencer Record, then clicking on Start.

Step Eleven: Record A Second Track

Once you are finished with your first Track, click on the Input Selector of another Track to record. The "R" in the first Track should change to a "P" to indicate Play mode, while the "P" in the new Track should change to "R" to indicate Record mode.

NOTE → This may not happen if the first Track's Input Selector was not selected. You can change the "R" to a "P" in the first Track and the "P" to an "R" in the second Track manually in this case. Just click on the button.

Click on the Record button in the Transport Controls, then click on Start. Your first Track starts to play. Play along with it as the Sequencer records your performance on the second Track.

When you are finished recording, click on the Stop button and take the second Track out of Track Record mode. Next, click on the Start button to play both Tracks from the beginning.

You have now accomplished basic multi-track recording.

Step Twelve: Save Your Song

Now that you've composed some music, let's save it to disk.

Select Save As from the Song menu. Point the File Requester to the appropriate directory where you want to save your Song. Then enter a name for your Song and hit return, or click on the Save button.

Advanced Recording Topics

The rest of this chapter covers more sophisticated aspects of recording that you may not need initially but will appreciate as time goes by. Feel free to skim these topics and check back when the need warrants.

CHAPTER SIX

Multiple In Recording

There are times that you need to record multiple MIDI channels simultaneously. For instance, you might want to simultaneously record yourself on one Track and someone else on another Track. Or, you might want to transfer several Tracks from another MIDI Sequencer into Bars&Pipes Professional.

In either case, choose Multiple In from the Main menu's Preference menu. This turns the Input Selectors on each Track into MIDI channel selectors. Click on these selectors to choose which MIDI channel should enter into each Track. Now all Tracks act as inputs but each Track only receives MIDI events set for its particular channel.

When Multiple In isn't selected, all events, regardless of MIDI channel, are sent to the Track with the active Input Selector.

Manual Punching In And Out

Suppose you record a Track and discover one section that needs to be fixed. It would be a waste to record the entire Track just to get one phrase right. Bars&Pipes Professional solves this by letting you enter and leave record mode on the fly. This is called "punching in" and "punching out." Punch In switches Bars&Pipes Professional from playback to recording, Punch Out switches back to playback.

To switch from playback to record (punch in) at any point while the Song is playing, click on the Record button in the Transport controls. At this point, the music playing on all Tracks that are currently in record mode stops and the Tracks start recording. Switch back to playback (punch out) by clicking again on the Record button and the Tracks resume playing. You can continue to punch in and out as many times as is necessary. When you finally stop the performance and play it again from the top, all of the "punched" sections are erased and replaced with the new recording.

Automatic Punching In And Out

Manual punching in and out has its limitations. If you are working alone, you'd need two arms to play and a third to punch in and out. Bars&Pipes Professional provides that third arm with the Punch In and Punch Out Flags.

Bars&Pipes Professional's Punch In and Out Flags automatically switch the Sequencer in and out of Record mode at preset locations.

To use the Punch In and Out Flags, move them to the boundaries of the section you'd like to record.



To move a Flag, first drag the scroll bar at the bottom to display the desired section, then drag the flag itself to the desired location.

- ★ TIP ★ You can also set flags directly with the Set Flags window, accessed from the Windows menu.

When you drag flags, Bars&Pipes Professional aligns them with time boundaries. Set the alignment with the Alignment option in the Preferences menu.



Once you've positioned the Flags, click on the Punch In/Out button in the Transport Controls window. (Open the Transport Controls window by double-clicking on its icon, or choosing Transport from the Windows menu.)

Doing so activates the Punch In and Out and sets the Sequencer to start four measures before the Punch In point.

If you'd rather start elsewhere, use the Rewind, Fast Forward, or Auto-Locate buttons to relocate the Position Marker after clicking on the Punch In/Out button.

After you've positioned the Flags, start the Sequencer. At the Punch In point, the Sequencer Record button automatically depresses and all Tracks in Track Record mode switch from playback to recording. At the Punch Out point, these same Track revert to playback.

- ★ TIP ★ Double-clicking on the Punch In/Out button both moves the Song Position marker back four measures and starts the Sequencer automatically.

To Punch In only, drag the Punch Out flag to the far right, which places it at the end of the Song. To Punch Out only, drag the Punch In Flag all the way to the left, which places it the beginning of the Song's first measure.

If you select the Clean Cuts command in the Preferences menu, Bars&Pipes Professional will start recording at the Punch In flag. Any notes that were started in the measure prior to the Punch In flag will be truncated. Notes that end after the Punch Out flag will be truncated, as well.

If you do not select the Clean Cuts command in the Preferences menu, notes that you play before the Punch In flag will not be truncated or recorded at all in the Punch area. Notes that you hold past the Punch Out flag will not be cut off at the Punch Out flag.

Merge Recording

When you place a Track into Merge mode instead of Record mode, newly recorded events will be merged with the current contents of the Track.

Merge mode is designated by a red "M" in the Track.

CHAPTER SIX



Unlike Record mode, Merge mode does not erase the MIDI events that are already in the Track. Instead, it mixes the existing notes with the newly recorded MIDI events. Merge mode may also be used with the Punch In/Out function.

Loop Recording

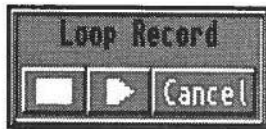


The Loop button in the Transport Controls activates the Loop Mode recording function.

With Loop Mode, you can record one section of your Track over and over. Use the Loop Mode button in conjunction with the Loop Flags.

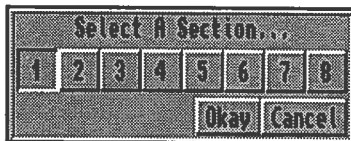


Position the Loop Flags on the boundaries of the section you'd like to loop. Then click on the Loop button, which in turn opens the Loop Record requester. Bars&Pipes Professional automatically places the Song Position Marker at the start of the looped section and activates the Sequencer Record button.



To begin recording, click on the Play button in the Loop Record requester. Bars&Pipes Professional plays the section marked by the Loop Flags eight times. This gives you eight opportunities to record in the looped section.

When the eighth loop finishes playing, or when you've clicked on the Stop button in the Loop Record Requester, another requester opens. This, the Loop Choice or Select A Section requester, allows you to choose which of the eight repetitions to keep. If you change your mind, select Cancel to abort the Loop Recording process.



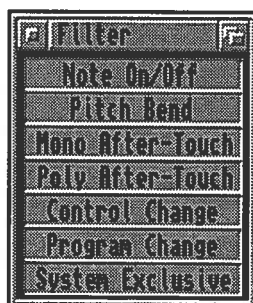
The Loop Choice requester represents the eight versions recorded during Loop Mode by buttons numbered one through eight. Click on each number to hear its particular version. When you settle on a choice, click Okay to accept it. Bars&Pipes Professional retains only the selected version, discarding the other seven versions. If you are unhappy with all eight versions, select Cancel to discard all of them.

★ TIP ★ For a different kind of loop recording, please read about the Pattern Tool in Chapter 27.

The Record Activation Window

The Record Activation window allows you to globally filter MIDI events when recording with MIDI In Tools. Furthermore, prerecorded MIDI events can be selectively left alone while others are recorded on top of them.

Open the Record Activation window by choosing the Record Activation option in the Main menu's Windows menu. A window similar to a MIDI In Tool's Control window opens.



Highlight the MIDI Events you want to record, and deactivate the MIDI Events you want to ignore. Events appearing in red are recorded, while unhighlighted events appearing in blue are filtered out.

Bars&Pipes Professional will remove filtered events before they enter the Sequencer. It will not, however, remove existing events of the same type that have previously been recorded into the Track.

Here's a quick example: Let's assume that you have recorded a sequence on Track 4 that includes pitch bends and control changes. If you want to rerecord the notes on the Track, but leave the pitch bends and control changes intact, choose to ignore (deactivate) Pitch Bend and Control Change in the Record Activation window. When you rerecord Track 4, the new notes will be recorded, while the pitch bends and control changes will be left alone.

CHAPTER SIX

Stuck Notes

If you experience stuck, or "hung," notes, click on the Stop button in the Transport Controls window. This sends the MIDI All Notes Off command through all Tracks to each Track output. As a result, most MIDI instruments turn off their voices.

Clogged Pipeline

It is possible to create a "logjam" in the PipeLines. For example, if MIDI enters and exits the same PipeLine, and the MIDI synthesizer returns the notes it receives to Bars&Pipes Professional, a feedback loop results.

At this point, none of the Transport Controls are operable. If this "logjam" occurs, press the Escape key on your Amiga keyboard. You may need to press Escape several times to completely clear the PipeLine.

Chapter 7

Overview

If you've read the previous chapter, you know how to record and overdub Tracks. Now it's time to move to one of the most important aspects of Bars&Pipes Professional: Using Tools.

What is a Bars&Pipes Professional Tool? Technically, a Tool is device that sits in a Track's PipeLine and performs an operation on the MIDI events flowing through it. Some Tools are musical in nature and perform operations that are standard operations, like delay and quantize. But Tools can also organize the flow of the music by interconnecting PipeLines, help compose music by creating or changing notes, and even translate music events into other media, such as displayed pictures.

Tool Modules

Tools are special additions to Bars&Pipes Professional's main program. Each Tool is actually a separate module that Bars&Pipes Professional loads. This is a very important concept.

You can expand the capability of Bars&Pipes Professional by adding more Tools without upgrading Bars&Pipes Professional itself. And, you can remove unneeded Tools to save memory.

Once you've loaded a Tool, Bars&Pipes Professional automatically installs it each time. When you remove a Tool, Bars&Pipes Professional will no longer install it.

NOTE → Some times, you might create a Song with a particular Tool in its PipeLines, save it, then remove the Tool at a later date. Great news! If Bars&Pipes Professional senses the Tool is missing, it reinstalls it automatically.

Multiple Usage Of Tools

Once you've installed a Tool in Bars&Pipes Professional, you can use it in several different places at a time. Each time you drag a Tool out of the ToolBox, Bars&Pipes Professional makes a unique copy of the Tool. This way, you can setup each copy to behave differently.

Example:

Set one instance of an Echo Tool to create four echoes in Track 1, while setting a second Echo Tool in Track 2 to create only two echoes. Each Echo Tool is a unique copy of the original Echo Tool that Bars&Pipes Professional loaded when you installed it.

CHAPTER SEVEN

Tool Types

Tools fall into two primary categories: Music Tools and Multi-Media Tools. Within these categories, Tools are further classified as Input, Output, and Branching Tools. Input and Output Tools serve as the inputs and outputs of each Track's PipeLine, i.e., the MIDI In and MIDI Out Tools. Branching Tools connect PipeLines between Tracks. Combinations of Tools are called MacroTools.

Music Tools

Music Tools perform musical functions. The Quantize Tool (tightens the note timing,) CounterPoint Tool (creates a counter melody,) and Quick Patch Tool (sets up the MIDI instrument) are examples of Music Tools.

Multi-Media Tools

Multi-Media Tools, in conjunction with Bars&Pipes Professional's Media Madness window, control non-musical aspects of sequencing, including other hardware and software. The ANIMal Tool (plays animations,) Toasty Tool (controls the Video Toaster,) and Command Performance Tool (sends ARexx commands to other programs) are examples of Multi-Media Tools. Most of the Multi-Media Tools are also Output Tools. The Media Madness window controls Multi-Media Tools that are also Output Tools.

Macro Tools

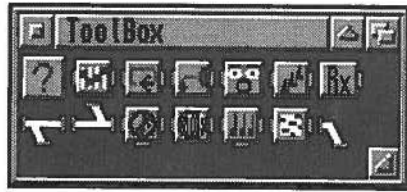
MacroTools are a special category of Tools. MacroTools are combinations of regular Tools. Use MacroTools to create your own Tools by putting together individual Tools with the Create-A-Tool feature. MacroTools have icons, may be placed in PipeLines, and are loaded separately from disk, just like all other Tools.

The ToolBox



Bars&Pipes Professional organizes the installation, usage, and removal of Tools all from one window, the ToolBox.

Open the ToolBox by double-clicking on its icon, or choosing the ToolBox command from the Windows menu. The ToolBox window displays all currently installed Tools.



Tool Icons

Tools appear in the ToolBox as icons. Select a Tool by clicking once on its icon. To place a copy of the Tool in a Track or ToolPad, hold down on the mouse and drag the Tool to the desired destination. This makes a copy of the Tool and places it.

NOTE → If there are no Tools in the ToolBox, Bars&Pipes Professional can't find the Tools to load. Often this occurs with improper installation. You will need to load in the Tools one by one. Please see the section below, *Installing Tools*.

The Question Mark Button

The first icon in the ToolBox window, the grey box with the "?" (question mark), is not a Tool. If you click and hold the mouse button over the question mark, a pop-up menu opens containing the names of all the Tools in the ToolBox.

To select a Tool with the pop-up menu, drag the mouse pointer until the desired Tool name highlights; then release the mouse button. A copy of the Tool icon "sticks" to the mouse. You can then drag the Tool to a Pipeline or ToolPad to drop the selected Tool in it, or click anywhere else to eliminate the copy.

Tool Names

You can optionally display the Tool names to the right of each icon by selecting the Show Tool Names option in the Preferences menu of the ToolBox.

Installing Tools

The first time you run Bars&Pipes Professional, it loads a preset collection of Tools. This preset collection is a mere subset of the dozens of Tools that come with Bars&Pipes Professional. In order to access the additional Tools included with the program, you must install them.

To install a Tool, use the Install Tool command in the ToolBox menu. This command loads the Tool from disk, places it in the ToolBox and makes the Tool a permanent part of your environment. Once you've installed a Tool,

CHAPTER SEVEN

Bars&Pipes Professional automatically loads the Tool every time it runs until you remove the Tool with the Remove Tool command.

Example:

-
1. *Open the ToolBox window, if it is not already open.*
 2. *Activate the ToolBox window by clicking on it.*
 3. *Access the ToolBox menu by holding down the right mouse button and dragging the mouse pointer to the top of the Bars&Pipes Professional screen, over the words "ToolBox." The ToolBox menu opens.*
 4. *Drag the mouse down over the words "Install Tool..." and then release the right mouse button. The file requester opens.*
 5. *If the file requester is not already in the Tools directory, find the directory where you keep your Tools.*
 6. *Find the Loop Tool in the Tools directory. Double-click on Loop to open it.*
-

NOTE → A text file called Tools is kept in the Support directory to keep Track of which Tools have been installed. Although we don't recommend it, you can edit this file in a text editor. Please see Chapter 31, Customizing Your Environment, for more information on the Support directory.

You might load a Song or MacroTool that includes Tools that are no longer installed. Bars&Pipes senses this and tries to automatically install the missing Tools. If it can't find them, it prompts with the file requester and the missing Tool name. Then, Bars&Pipes Professional actually installs the missing Tool. As a result, the process of loading a Song can actually install one or more Tools permanently in the ToolBox!

Removing Tools

If you have a Tool in your ToolBox that you never use, consider removing it. Too many Tools eat up precious memory, take extra time when loading Bars&Pipes Professional, as well as create a jungle of icons.

To remove a Tool, first select it in the ToolBox. Then, select the Remove Tool command in the ToolBox menu. This removes the Tool and tells Bars&Pipes Professional not to automatically load the Tool every time it runs.

NOTE → If the Tool is in a Track, ToolPad, or ToolTray, Bars&Pipes Professional alerts you that the Tool is in use, and asks you to verify the operation.

The Remove Tool option does not erase the Tool from your disk. It only removes the Tool's name out of the active Tool list, stored in the file "Tools" in the Support directory.

Creating, Editing & Saving MacroTools

Three additional commands in the ToolBox menu control the design and updating of MacroTools.

To create a new, empty MacroTool, select the command Create MacroTool. This creates a blank MacroTool and opens the Create-A-Tool window to edit it. Please see Chapter 24, Create-A-Tool, for more information.

NOTE → You can install and remove MacroTools as you would any Tool.

If you'd like to make changes to an existing MacroTool, click once on the MacroTool to select it, then choose the Edit MacroTool command in the ToolBox menu, or double-click on the MacroTool. The Edit MacroTool command opens the Create-A-Tool window, so that you can make design changes.

Although the Create-A-Tool window automatically prompts you to save the MacroTool, you can also do so directly by selecting the Save MacroTool command found in the ToolBox menu. This opens the file requester, where you may choose a destination file.

NOTE → Saving a MacroTool to a new location updates the installation information in the Tools file. Bars&Pipes Professional will always load the MacroTool from the new file location instead of the old.

Using Tools in the PipeLine

Tools are most often used in the PipeLine and ToolPad. In the PipeLine, a Tool processes music flowing through it. In the ToolPad, a Tool modifies entire segments of music all at once, using the Toolize command found in the Edit and Tracks menus.

A Tool in a particular Track's PipeLine modifies the MIDI data that flows through it. Most Tools may be placed in either the Input PipeLine or the Output PipeLine. Some Tools are Input Tools, and only place themselves as the first Tool on the Input PipeLine. Other Tools are Output Tools, and only place themselves as the last Tool on the Output PipeLine.

Bars&Pipes Professional displays the complete PipeLines with all Tools only in the Tracks window, although it does display the final Output Tools in the Media Madness window as well.

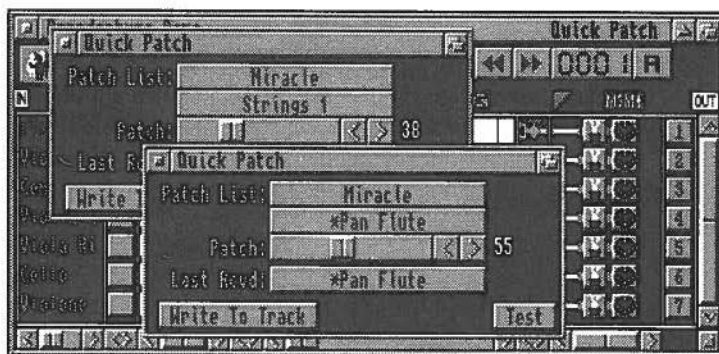
CHAPTER SEVEN

Placing A Tool In A Pipeline

To place a Tool in a PipeLine, drag a copy of the Tool from the ToolBox, another PipeLine, or a ToolTray (more on that later,) and drop it into the PipeLine.

Opening The Tool's Control Window

Double-click on a Tool in a PipeLine to open its Control window. Alternatively, highlight the Tool by single-clicking on it, and choose Edit from the Tool menu. You can edit the Tool's Control window while Bars&Pipes Professional plays and MIDI events flow through the Tool. As a result, you hear instant feedback as you make changes in the Control window. You can also open multiple Control windows at once.



Duplicating A Tool

You can duplicate an existing Tool in the PipeLine by clicking on the Tool and dragging it to a new location. Copying a Tool in this manner is useful because you can edit one Tool's Control window, then place duplicates in several other Tracks.

Moving A Tool In The PipeLine

To move a Tool in the PipeLine, click on the Tool once to highlight it, then choose the Move Left and Move Right commands in the Tools menu. Alternatively, you can use the left and right arrow keys on the Amiga keyboard to move the highlighted Tool. You can even make a Tool jump across from the Input PipeLine to the Output PipeLine and vice versa. You cannot, however, move Input and Output Tools.

NOTE → Remember, clicking on and dragging a Tool duplicates It, rather than moving It. Also, moving a Tool from the Input PipeLine to the Output PipeLine or vice versa breaks Its connections with other Tools.

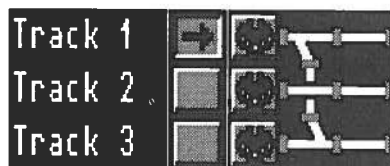
Connecting With Vertical Pipes

You can actually connect a Tool in one Track to Tool in another via vertical pipes. To do so, you need two types of Tools: The first type, the *branching* Tool, uses preset criteria to send MIDI events to another Track. There are many branching Tools. For example, the Keyboard Splitter Tool sends all notes below its split point to a second Track and the CounterPoint Tool can send the countermelody to a second Track.

The second type of Tool, the *merging* Tool, sits in the second Track's PipeLine and receives incoming MIDI events. Unlike the branching Tools, there is only one merging Tool included with Bars&Pipes Professional, the Merge In Tool.

NOTE → The Pro Studio and Creativity Add-On Kits include merging Tools that use MIDI events coming down the vertical pipes to control events in the second Track's PipeLine.

To connect a branching (sending) Tool to the merging (receiving) Tool, click on the branching Tool. Then select the Connect command in the Tools menu and click once on the merging Tool. A vertical pipe will be drawn between the two Tools, indicating that they are connected.



Removing A Tool

To remove a Tool from the PipeLine, highlight that Tool by clicking on it. Then select Remove from the Tool menu to remove the Tool. Alternatively, you can use the Del key on the Amiga keyboard.

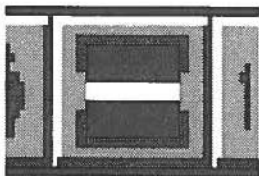
Using Tools in the ToolPad

The ToolPad provides a means to permanently change your music. Whereas Tools in PipeLines process events as the events flow through them, Tools in the ToolPad do nothing until you use the Toolize command. Using the Toolize command causes the entire Song, individual Tracks, or parts thereof, to change permanently.

You'll find ToolPads in the Tracks window, the Edit and List Edit windows, the Media Madness window, and the Song Construction window. These

CHAPTER SEVEN

buttons all represent the same ToolPad, regardless of which window they appear in.



Unlike Tools in the PipeLine, Tools placed in the ToolPad do not process notes as they are played. Instead, they process all of the notes in a Song, sequence, or section. For example, if you place the Quantize Tool in the ToolPad, you can use it to Quantize all of the notes in a selected Track. The ToolPad holds up to sixteen Tools at once.

Placing A Tool In The Toolpad

To place a Tool in the ToolPad, click and drag it from the ToolBox, a ToolTray, or even a Track's PipeLine, and drop it onto the ToolPad. If the ToolPad is not full, the new Tool takes the next empty slot. However, if the ToolPad is full, the new Tool replaces the currently displayed Tool in the ToolPad.

NOTE → You can put more than one of the same type of Tool in the ToolPad.

Selecting A Tool From The Toolpad

To select a Tool from the ToolPad, click down on the pad with the mouse and hold it. Under the mouse, a pop-up menu appears with sixteen Tools displayed. (The unfilled slots are displayed as empty pipes.) Move the mouse pointer to the Tool you need and lift up. The ToolPad now displays that Tool.

Editing A Tool In The ToolPad

To edit a Tool in the ToolPad, called a PadTool, first select it, then use the Edit PadTool Controls command in the Windows menu.

★ **TIP** ★ You can also hold down the Shift key on your Amiga keyboard while clicking on the ToolPad.

This opens the Control window for the Tool, if one exists. Some Tools do not have parameters to change and therefore no Control window. You can keep the Control window open for the Tool as you use it to process your Song. You can even have several Tools' Control windows open at the same time.

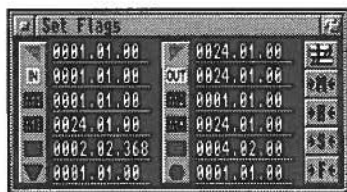
Removing A Tool From The ToolPad

There is no need to remove a Tool from the ToolPad. Once the ToolPad is full, placing a Tool in the ToolPad replaces the currently showing Tool.

Toolizing With The ToolPad

Tools placed in the ToolPad can process all of the notes in an area of your Song. To do so, use the Toolize command, found in both the Edit and Track/Group menus.

The Toolize command in the Edit menu processes all notes on all Tracks between the Edit Flags. Set the Edit Flags (the two purple triangles) either by dragging them in the Tracks window or typing in positions in the Set Flags window.



For more information on editing with the Edit Flags, please see Chapter 20, Multi-Track Editing.

The Toolize command in the Track/Group menu processes all notes in the currently selected Track or a Group of Tracks.

- ★ TIP ★ Use the Output PipeLine to test a Tool while changing its controls. Once you're pleased with the results, drag the Tool into the ToolPad and Toolize the entire Track to make the changes permanent. Then, delete the Tool from the PipeLine since it no longer is needed.

Replacing A Tool In The ToolPad

To replace a Tool in the ToolPad with another Tool, select the Tool to discard by choosing it from the pop-up menu so that it appears in the ToolPad on the screen. Then drag the new Tool from the ToolBox onto the ToolPad. The new Tool replaces the displayed one.

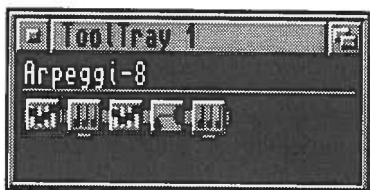
ToolTrays

The ToolBox organizes the original copies of each Tool. Every time you drag a Tool from the ToolBox and place it in a PipeLine, you must double-click on the Tool and edit its Control window. In other words, while a Tool resides in the ToolBox, it cannot be edited.

CHAPTER SEVEN

On the other hand, ToolTrays provide a place to keep preset versions of Tools. Just drag a Tool from the ToolBox into a ToolTray and then edit the Tool's Control window by double-clicking on the Tool in the ToolTray. From then on, drag the Tool from the ToolTray instead of from the ToolBox, and the changes you made remain intact. You can organize up to sixteen individual copies of Tools in each of eight ToolTray windows.

To access a ToolTray, choose one of the ToolTrays in the Tool menu. If the ToolBox window is active, you can also select a ToolTray from the ToolTrays menu. The ToolTray window opens.



Drag a Tool from the ToolBox or from a PipeLine and drop it into the ToolTray beneath the horizontal gray line. The name of the Tool appears above the gray line.

Modify the name of the Tool by clicking on its name and using the Amiga keyboard.

NOTE → Changing the name of the Tool in the ToolTray does not change the name of the Tool in the PipeLine or ToolBox. This feature allows you to keep several copies of the same Tool in a ToolTray, and be able to distinguish between them when you click on them.

For example, you might prepare two versions of the Quantize Tool with different resolutions and give each a name that describes its resolution.

Double-click on a Tool in a ToolTray to open that Tool's Control window. Set the parameters to whatever you want. When you drag this Tool into a PipeLine or ToolPad, it retains these parameters.

NOTE → The ToolTrays load and save with your composition.

For a complete explanation on using ToolTrays, please see Chapter 25, ToolTrays.

Examples

In the following sections, we present some step by step examples of using specific Tools. This will help you to understand the Tool concept, and how to use Tools in your own compositions.

Let's look first at a very simple Tool called the CounterPoint Tool. Open your ToolBox. If you do not see the CounterPoint Tool, install it.

NOTE → There are several ways to view Tools by name: You can click on the ? button to access a scrolling list of Tools, You can click on a Tool and view its name in the ToolBox window's Title bar. You can also select the Display Tool Names option in the ToolBox window's Preferences menu to display the Tools by name as well as icon.

The CounterPoint Tool does not have a Control window.

Using CounterPoint On The Input Pipeline

Grab the CounterPoint Tool from the ToolBox by clicking on it with the left mouse button. Drag the Tool until it is over the Input Pipeline of Track 1, just to the right of the MIDI In Tool. Release the mouse button. Activate the Input Selector for Track 1.



Play a few notes on your keyboard. You'll hear an accompaniment to the notes you play

Here's how it works: The notes you play on your keyboard come into the active MIDI In Tool. Then, the notes flow into the CounterPoint Tool. The CounterPoint Tool creates a countermelody note for each note that enters it.

The original note and the countermelody note flow down the rest of the Input Pipeline and into the Sequencer. Even if Track 1 is in record mode, since we haven't activated the Sequencer Record mode, the notes just travel right on through the Sequencer.

When the notes reach the Thru/Mute/Play faucet, they continue through if it is in Thru mode. Thru mode is represented by a blue faucet with two inputs on the left side.

NOTE → If the faucet is red, without an input on the left side, it is in Mute mode. Nothing will play out of the Track when the faucet is in Mute mode. If the faucet is yellow, with one input on the left side, it is in Play Only mode. In Play Only mode, only notes previously recorded into the Track go through.

The notes flow down the Output Pipeline until they reach the MIDI Out Tool. The MIDI Out Tool sends the notes out the MIDI out port on your interface, on the MIDI channel selected by the MIDI channel selector. The MIDI channel selector is the blue number on the right of each Track.

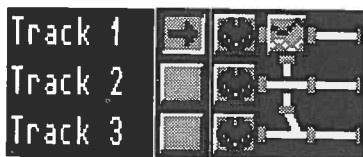
CHAPTER SEVEN

Sending The Countermelody To Another Track

Now, let's record the original melody on Track 1, and the countermelody created by the CounterPoint Tool on Track 3. We can do this because the CounterPoint Tool is a Branching Tool. To use any branching Tool, you'll need the Merge Tool.

Select the Merge Tool from the ToolBox. Its icon is a horizontal length of pipe with an angled pipe entering it from the top left. If you don't see the Merge Tool, load it in. Place the Merge Tool on the Input PipeLine of Track 3.

Click on the CounterPoint Tool with the mouse. A red box surrounds it to show that it is the active Tool. Select Connect from the Tool menu, then click on the Merge Tool. Bars&Pipes Professional connects the CounterPoint Tool to the Merge Tool with a vertical piece of pipe. Now the countermelody flows down the vertical pipe and into the second Track.



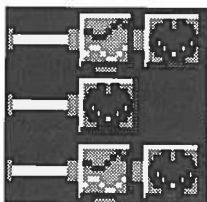
With the Input Arrow on Track 1 still active, click on the blue 'P' in Track 3 until it turns into a red 'R'. The red 'R' should already be showing in Track 1.

Now, record another melody. When you stop the Transport, notes in Track 1 and in Track 3 are displayed. Track 1 contains the original melody, while Track 3 contains the counter melody.

Using CounterPoint On The Output Pipeline

Now that you have two Tracks containing a melody and a countermelody, let's see what happens when we place a CounterPoint Tool on the Output Pipeline of both Tracks.

You don't need to open the ToolBox to get another copy of the CounterPoint Tool. Just grab the one that is on the Input Pipeline of Track 1. Place copies of the CounterPoint Tool on the Output Pipelines of Tracks 1 and 3.



Press Start on the Transport Controls to listen to the effects of these Tools. You should hear four notes simultaneously: two out MIDI channel 1 and two out MIDI channel 3.

Toolizing With CounterPoint

Pick up another copy of the CounterPoint Tool and drop it into the ToolPad. The ToolPad is the box in the upper left corner of the Tracks window, to the right of the Solo button, and to the left of the Group buttons numbered 1 through 8.

Click on Track 1, then select Toolize from the Track menu. Notice that it instantly doubles all of the notes in Track 1, adding the countermelody to the recorded music. Press Start on the Transport to hear the results.

Other Examples

You'll find more Tool examples in the Tools chapter. Learning how to use Tools can be a daunting task. Take it slow and learn one Tool at a time. Try every Tool that you can in as many ways as possible. Experience is the best teacher.

Have fun and experiment! Remember, you can always leave a Tool's Control window open while you experiment with it. In particular, this is very useful for setting up a Tool while music flows through it in the PipeLine.

Once you've learned all of the Tools that come with the basic Bars&Pipes Professional package, remember that we continue to release new Add-On Tool Kits. Call or write to us for more information.

CHAPTER SEVEN

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Chapter 8

Overview

Bars&Pipes Professional's Graphic Editor lets fine-tune your composition. All of its buttons, menu options and features eliminate guess work. In fact, the Graphic Editor has so many features that we've divided our discussion of it into several chapters. This chapter covers specifically note entry and editing.

Sequenced Notes

Before we delve into editing notes with Bars&Pipes Professional, let's look at how Bars&Pipes Professional actually represents those notes.

Sequenced notes are comprised of MIDI note on and note off events that you've input. The MIDI standard allows for a total of 128 different note values, beginning with the note C0 (C, octave 0) denoted by the byte 0, and ending with the note G10 (G, octave 10,) denoted by the byte 127.

NOTE → Some synthesizers refer to the range as C-2 through G8.

Bars&Pipes Professional stores a note as a MIDI note pitch number, a starting time, and a duration. To reproduce a stored note, the Sequencer sends out the MIDI note on event at the starting time, waits for the duration, and then sends out the MIDI note off event for that note.

NOTE → In the Multi-Media portions of this manual, you will see references to items called hit lists. A member of a hit list is actually a note in disguise. While using hit lists, instead of note number representing a note, the note number represents a command. When a Multi-Media Tool receives this command, it performs whatever task you've programmed it to perform. You'll learn more about this in Chapter 28, Media Madness.

Opening The Graphic Editor

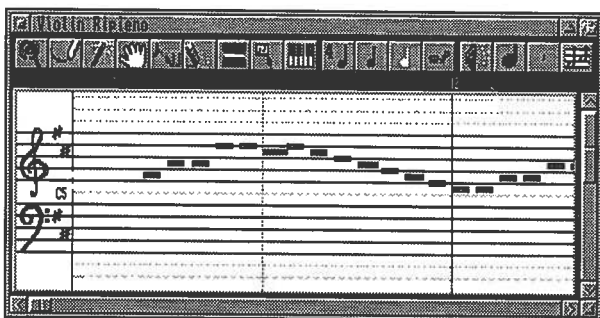
To Open the Graphic Editor, double-click on the Track you'd like to edit, or select the desired Track and press Return. The Graphic Editor window opens, and displays the Track.

NOTE → The Graphic Editor window is also referred to as the Edit window.

The Sequence Display

The Sequence Display occupies most of the Edit window. It shows your Sequence from left to right.

CHAPTER EIGHT



Vertical lines, indicating the beats and measures, provide you with a view of the exact time and place of each note.

SMPTE Time



Click on the SMPTE button, located on the far right end of the Graphic Editor's command button to view the Sequence Display in SMPTE time rather than in measures and beats. This option is very useful if you're working on a project where you need to know when particular events happen in absolute minutes and seconds instead of music time.

Sizing The Display

The Sizing... option in the Display Options menu gives you five choices for displaying data: Very Large, Large, Normal, Small and Very Small. If you choose Very Large, you can do very fine work with the timing of your notes. On the other hand, the lowest resolution, Very Small, is the same as the resolution in the Main Screen. At this resolution, you gain a much better feel for how your Song progresses.



You can also use the Zoom In and Zoom Out buttons to enlarge or reduce the display size. Click the Zoom In button to select the next larger size, up to Very Large. Click the Zoom Out button to select the next smaller size, down to Very Small.

NOTE → The sizing of a Track determines how many measures across will be printed when printing notation.

The Show Menu

From the Edit window, use the Show menu to determine what options Bars&Pipes Professional draws in the Sequence Display. By default, Bars&Pipes Professional displays the Hybrid Staff, Piano Roll and Velocity Curve, the options most frequently used. You can toggle as many options as

you want at once by holding down the right mouse button and clicking the left mouse button over the items you want to toggle.

The Staff - Hybrid

Displaying The Hybrid Staff

When you select Staff-Hybrid from the Show menu, Bars&Pipes Professional displays notes as horizontal bars on a traditional treble and bass clef. The length of the bar reflects the length of each note. Bars&Pipes Professional marks accidentals with sharps and flats. If you haven't defined a key, the Staff defaults to the key of C MAJOR.

If you select the Hit List option in the Display menu, all notes that have hit translations assigned to them display the name of the hit (for example, "Dog Bark" or "Door Slam") instead of the note rectangle. Hit List Translations are used primarily by the Media Madness Tools and the List Editor. We'll talk about Hit Lists extensively in later chapters.

Centering The Hybrid Staff

The center of the Staff - Hybrid defaults to middle C, octave five on the MIDI keyboard. To change to another octave, use the Note Range... Staff Center command in the Display Options menu. The Staff Center requester opens.



In the box to the right of "Center," the requester displays the note currently at the center of the Staff. By default, the Staff centers around C5, the note C of the fifth octave.

To change the octave, click on the center note and hold the mouse down. Under the mouse, a pop-up menu appears with a choice of octaves. Move the mouse to the one you want and lift up. The center note changes to C of the octave you choose.

The Auto Center button automatically calculates the center note and accommodates the range of notes displayed.

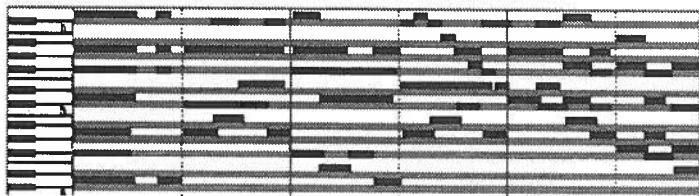
When you finish, press Okay, to accept the new Staff Center, or Cancel, to leave it as it was.

CHAPTER EIGHT

The Piano Roll

Displaying The Piano Roll

When you select the Piano Roll, Bars&Pipes Professional displays your MIDI note events as horizontal bars on a graph which extends from a column of piano keys on the left. Like the Hybrid Staff, notes are blue.



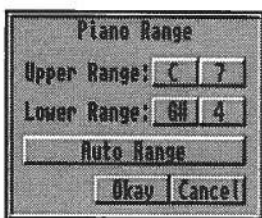
If you select the Background... Key option in the Display Options menu, the spaces on the graph that make up the current key are displayed behind the notes in a faded purple color. To learn how to set the key, please see the chapter on Song Parameters.

Like the Hybrid Staff, you can also display notes as Hits by selecting the Hit List option in the Display menu.

Changing The Piano Roll Bounds

At times, the Piano Roll may display too much or too little of your composition. A Note Event can span a range of 128 notes, just over ten octaves. The Piano Roll can show all or any section of that ten-octave keyboard. Since an individual Sequence rarely ranges more than two octaves, Bars&Pipes Professional shows two octaves by default.

To change the range of notes displayed, select the Piano Roll Bounds command, which opens the Piano Range requester.



You can set two variables: the Upper Range and the Lower Range. Respectively, these denote the highest and lowest keys displayed on the Piano Roll. The Piano Roll will not display notes above the Upper Range nor below the Lower Range.

Define each boundary by the specific note and octave. To select the note, click on the note letter, in this example, C. A pop-up menu of a piano keyboard appears under the mouse. Drag the mouse to the note of choice and lift up. To set the octave, click on the octave number, in this case, 4, and a pop-up menu of octave choices appears under the mouse. Select the octave and lift up on the mouse.

The Auto Range button automatically sets the upper and lower boundaries of your sequence. To accept the new Piano Roll bounds, click on Okay. To return to the Graphic Editor window without any changes, select Cancel.

The Velocity Curve

When you select the Velocity Curve, Bars&Pipes Professional draws the velocity of each note as a vertical line. The greater the velocity, the higher the line. Since most synthesizers translate velocity directly to loudness, consider the velocity curve as a volume curve.

If your keyboard supports velocity, then the harder you strike the keys, the louder the instrument plays.

NOTE → A number of drum machines and synthesizers that don't respond to velocity when you play them directly nevertheless respond to velocity when they receive the notes from Bars&Pipes Professional.

Staff - Notation

When you select Staff-Notation from the Show menu, Bars&Pipes Professional displays the notes on a traditional treble and bass clef in standard musical format. Please refer to the section on Notation later in this chapter for more information about transcribing music to standard notation.

Tablature

When you select Tablature from the Show menu, Bars&Pipes Professional displays note pitches as fret numbers on guitar strings. The open string note value of each string, which can be changed, is shown on the left. For more information about transcribing to tablature, please refer to the Tablature section later in this chapter.

CHAPTER EIGHT

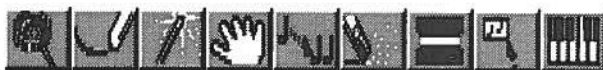
Editing Notes with the Mouse

Across the top of the Graphic Editor window sits a row of buttons. Think of these as a palette of options. By clicking on these, you select the manner in which you use the mouse to draw, erase, drag, and alter your music.

The buttons belong to three groups: the first nine buttons from the left, the Command buttons, determine how you use the mouse. The middle four buttons, the Default Note buttons, define the current note resolution for entering and editing. On the right lie the Zoom and Speaker buttons. Use the Zoom buttons to change the range of the display. Click on the Speaker button to hear the displayed section of music.

The Command Buttons

The first nine buttons from the left are the Command Buttons. As you click each one with the mouse, the mouse's icon changes. Most of these buttons have keyboard equivalents as well. Set the Command Buttons to determine how you use the mouse. The following list describes each button briefly.



From left to right, the buttons are as follows:

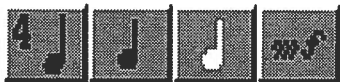
1. The Magnifying Glass displays information about notes you touch with the mouse.
2. The Pencil enters notes into either Staff, Tablature, or the Piano Roll.
3. The Magic Wand alters the length and velocity of notes in the Staves or Piano Roll; it alters the fret number of a note in Tablature.
4. The Hand grabs and drags notes.
5. The Duplicator makes an exact copy of the selected note and drags the copy to a new position.
6. The Eraser deletes notes.
7. The ToolPad contains selected Tools and processes notes with the currently-displayed Tool.
8. The Bounding Box, working in conjunction with the Drag, Duplicator, Erase, and ToolPad buttons, enables you to draw a rectangle around a set of notes and then Drag, Duplicate, Erase, or Toolize them. The Bounding Box, working in conjunction with the Magic Wand, allows you to tie notes together.

9. The Step Entry Button enables step entry of notes from a MIDI keyboard. This button enables you to enter notes and their durations at your own pace, without having to play your instrument keyboard in real-time.

Setting The Default Note

Before drawing, dragging, or step-entering notes, you must set the Default Note. The Default Note consists of a note value (eighth, quarter, etc.), a modifier (triplet, dotted, normal), an articulation (staccato, legato, etc.), and a dynamic level (pp through ff).

The middle group of four buttons sets these values. Upon being pressed with the mouse, each button reveals a pop-up menu with the options displayed. Drag the mouse to the desired option and lift up to select it. Bars&Pipes Professional displays your choice on the appropriate button.



From left to right, the buttons are as follows:

1. The Default Note Value and Default Note Modifier buttons determine the type of note to be entered by the Pencil or Step entry. It also determines the interval for dragging a note left or right, in conjunction with the Lock to Default Note option in the Prefs menu.
2. The Default Articulation button determines the length of the newly entered note.
3. The Default Velocity button determines the emphasis, or loudness, of the newly entered note.

NOTE → You can use the F7 through F10 keys to change these values. Use the shift key in conjunction with the function key to change them in the opposite direction.

Entering Notes With The Pencil



Activate the Pencil by clicking on the Pencil Button or pressing function key "F1." Then, click the Pencil on the display to enter notes in the sequence.

NOTE → Remember, the articulation (length) and dynamics (velocity) of the note you enter are defined by the Default Note.

Once you click down in the display, the way that the Pencil operates is determined by the following options in the Prefs menu:

CHAPTER EIGHT

- **Drag With Pencil:** When you hold down the mouse after entering a note, the Pencil becomes the Hand so that you can drag the note. Lift up on the mouse button when you are satisfied with the note's position.
- **Lengthen With Pencil:** When you hold down the mouse after entering a note, the Pencil becomes the Magic Wand so that you can shorten and lengthen the note. This option is most usable in the Hybrid Staff.
- **Lock to Default Note:** Entered notes align to the Default Note interval. For instance, if your Default Note is an eighth note, then all notes you enter align with eighth note increments in each measure.
- **Lock to Resolution:** The Pencil works as it does with the Lock to Default Notes option, except that it uses the Resolution value defined in the Notation menu (please see the Notation section, later in this chapter on page 66, for more information.)
- **Lock to Key:** The Pencil automatically places the notes in key (see Chapter 10, Editing Song Parameters.)
- **Lock to Rhythm:** The Pencil behaves as it does with the Lock to Default Note option, except that it conforms all notes to the current rhythm template boundaries (please see Chapter 10, Editing Song Parameters.)

Entering Notes In Staves

To enter a note in a stave, click with the Pencil. To add a sharp or flat, press once on the up or down arrow keys.

NOTE → Whether the note displays as a sharp or flat is determined by the Key Signature. Please see Chapter 10, Editing Song Parameters, to learn how to set the Key Signature.

Entering Notes In The Piano Roll

Use the Pencil to enter notes within the range of the Piano Roll. To change the range, go to the Note Range... command in the Display Options menu.

Entering Notes In Tablature

Choose a string and click down on it with the mouse. A fret number appears corresponding to the current position defined in the Position option in the Tablature menu. Slide the mouse up and down to change the fret number, and therefore, the pitch. Please see the Tablature section, later in this chapter, for more information.

Entering Notes with Step Entry

Use the Step Entry option to enter notes directly into the Graphic Editor from your MIDI keyboard. With Step Entry, you can record at your own pace without having to play your MIDI keyboard in real-time.

Activating Step Entry



To activate Step Entry, click on the Step Entry button. The mouse icon becomes a picture of a person's leg on a step. Then, position the left Edit Flag (the leftmost purple triangle above the display) in the location that you would like to begin step entry.

Important Points

Before Step-Entering, remember the following:

- Notes entering the Editor must first pass through the Tools in the Input PipeLine of the Track.
- ★ TIP ★ To temporarily disable a Tool, move it to the right side of the Track. Do this by selecting them and pressing the right arrow key on your Amiga keyboard. Remember to return them to the Input PipeLine when you're finished Step-Entering.
- Step Entry starts at the left Edit Flag. Click with the mouse at the point where you want Step Entry to begin. The left Edit Flag automatically snaps into place, marking the starting point for Step Entry.
- Step-Entered notes use the Default Note and Articulation.

Step-Entering A Note

To Step-Enter single notes, play them one by one. After you lift up on each one, the cursor moves forward. To enter a chord, hold down each member note, lifting them all up at once. When you release all notes, the left Edit Flag moves to the right, allowing you to immediately enter another note or chord.

Step-Entering A Rest

To enter a rest, press the Space Bar. The rest will be the same duration as a note.

Backing Up And Erasing Mistakes

To back up a step, and erase a mistake, press the Backspace key.

CHAPTER EIGHT

Refreshing the Display

To refresh the display at any time while editing, press the Return key on your Amiga keyboard. If you have selected "Auto Redraw" from the Prefs menu, the display refreshes automatically and you do not have to press the Return key.

Boxing Notes



Several of the Command buttons can be selected in conjunction with the Bounding Box button (F6 key). The Bounding Box lets you draw a box around a group of notes, then edit them all at once.

To draw the box, click down where you'd like one corner of the box to be and drag the mouse to the opposite corner. A box grows as your mouse travels. The box never crosses the boundary between two display strips, for example the Piano Roll and either Staff.

Once you have enclosed what you want in the box, lift up on the mouse.

The beginning of a note must be within the box to be counted as being a member. If only the later half of a note is in the box, it will not be one of the boxed notes.

The Bounding Box works in conjunction with the Magic Wand, the Eraser, the Duplicator, and the Toolizer. As we discuss each of these in the pages to follow, we'll describe how to use the Bounding Box in each case.

Altering Note Lengths and Velocities



Once you enter Notes, you may need to edit them by changing their lengths and velocities. To the right of the Pencil sits the Magic Wand. Select this button to alter the data with the mouse, either by clicking on it or by pressing function key "F2."

NOTE → The Magic Wand, in conjunction with the bounding box, allows you to tie notes of the same pitch together. Please see Tying Notes, below.

Altering Notes In The Hybrid Staff And Piano Roll

Use the Magic Wand to alter the length of individual notes. Click down with the mouse over a note; the Editor highlights the note in red. Drag to the left to make the note shorter or to the right to make the note longer.

If the Lock Wand to Note option in the Prefs menu is enabled, the Wand sticks to the first note you select. No matter where you drag the mouse, it

continually lengthens or shortens the note length. This is great if you want to edit just one note because the mouse never slips off the note.

If you want to change the lengths of more than one note at a time, deselect the Lock Wand to Note option in the Prefs menu. Edit the first note in the "stack," then drag the mouse vertically through the remaining notes. All remaining notes conform to the size of the first one you edited.

★ TIP ★ You can also use the Left and Right Arrow keys to decrease and increase, respectively, a note's length.

Altering Notes In The Notation Staff

Use the Magic Wand to conform notes to the current Default Note. Click on any note; the Editor automatically changes the note length to that of the Default Note.

Altering Notes In Tablature

You cannot use the Magic Wand to alter the length of a note in Tablature. Instead, use one of the Staves or Piano Roll, or utilize the Magnifying Glass.

Rather than altering the length of a note, the Magic Wand alters the fret number of a selected note in Tablature. Click on the note with the Wand, and slide the mouse up and down to the desired fret number.

Altering The Velocity Curve

Drag the Magic Wand over the Velocity lines to change them. This way, you can change their individual volume levels. As an option, use the Up and Down Arrow keys to increase and decrease a note's velocity.

Tying Notes



You can tie notes of equal pitch together by using the Magic Wand in conjunction with the Bounding Box. Activate the Magic Wand and Bounding Box buttons. Surround the notes you want to tie with the Bounding Box. This ties all notes inside the bounding box that are of equal pitch together and leaves all other notes alone.

CHAPTER EIGHT

Dragging Notes



When you select the Hand button, either with the mouse or function key "F3," the mouse icon becomes a hand with one finger extending. Use this to drag and reposition notes.

Dragged notes are affected by the following options in the Prefs menu:

- **Lock to Default Note:** The note you grab moves left and right on a grid defined by the Default Note. For instance, if the Default Note is a quarter note, every note you drag moves left or right at quarter note intervals.
- **Lock to Resolution:** The note you grab moves left and right on a grid defined by the Notation Resolution defined in the Notation menu.
- **Lock to Key:** The note you grab moves up and down, skipping notes that are not in the current key. Otherwise, the note moves up and down chromatically.
- **Lock to Rhythm:** The note you grab moves left and right on a grid defined by the current rhythm template.

Dragging Notes In A Staff Or The Piano Roll

Dragging notes right and left moves them forward and back in time. Dragging them up and down changes their position on either Staff or the Piano Roll, thereby changing their pitch.

If you have the Play Notes option in the Prefs menu selected, Bars&Pipes Professional plays each note as you drag it.

If you hold down the shift key prior to clicking on the note, the hand only moves vertically or horizontally, but not both, depending on your first move. In other words, if you hold the shift key down, click on the note, and start to drag it up in pitch, the note locks in time and only lets you change its pitch no matter how far to the left or right you drag the mouse. Likewise, if you start by dragging left or right, the note only moves in time, it does not let you change its pitch.

Dragging Notes In Tablature

Dragging notes up and down in Tablature, across strings, causes the note to jump from one string to another. The pitch of the note remains the same, while the fret number changes.

To change the note pitch, use the Magic Wand. This changes the fret number on the string, thereby increasing or decreasing the pitch.

Using Hot Keys For Dragging

You may also use the arrow keys on the Amiga keyboard to move a note. First, highlight the note that you want to change. Then, use the left and right arrow keys to shift the note backward and forward in time by the default note amount. Or, use the up and down arrows on the Amiga keyboard to change note pitch chromatically. The up arrow increases the pitch by one half step. The down arrow decreases the pitch by one half step. This is a great way to add sharps or flats to notes.

NOTE → In the key of C Major, and all key signatures that have sharps in the key signature, notes may only be sharpened. For instance, the note F# may not be displayed as a Gb. In key signatures that have flats, notes may only be flattened. For instance, the note Gb may not be displayed as F#. Double sharps and flats are not supported.

When you use the Shift key in conjunction with the up and down arrow keys, the note shifts its pitch by an additional octave.

Dragging With The Bounding Box

You can use the Hand and Bounding Box together to move a group of notes simultaneously. First, use the mouse to draw a box around the group of notes you want to move. Then, click down in the box and drag it.

Duplicating Notes



To duplicate notes, click on the Duplicator button or press function key "F4." When you click and drag a note, Bars&Pipes Professional creates a new note of the same type, which you may then drag to a new destination. Once it is dragging the note, the Duplicator behaves identically to the Hand as described above.

You can use the Duplicator in conjunction with the Bounding Box to duplicate a group of notes simultaneously and drag them to a new location.

Erasing Notes



To use the mouse to erase Notes, choose the Erase button, either by clicking on this button or pressing "F5." In selecting this button, the mouse icon becomes a Pencil with the Eraser end pointing down and to the left. To delete notes, click down and drag the Eraser over the Notes. You do not need to click down on each note individually. Instead, click down and drag the mouse through the notes, erasing them all at once, much like an Eraser on a chalkboard.

CHAPTER EIGHT

★ TIP ★ Use the Eraser and the Bounding Box to erase a group of notes simultaneously.

Toolizing Notes



The Graphic Editor Window contains a ToolPad. In it, you place Tools, which then can process, or Toolize, your music. The ToolPad holds up to sixteen Tools. This ToolPad contains a set of Tools identical to that in the Tracks window ToolPad. In fact, all of Bars&Pipes Professional's ToolPads, including those in other Graphic Editor Windows, share the same Tools

Placing A Tool In The ToolPad

To place a Tool in the ToolPad, drag it from the ToolBox, a ToolTray, or even a PipeLine, to the ToolPad. You can place Branching, Merge, and other pipe routing Tools in the ToolPad, but they have no effect on your music. If sixteen Tools occupy the ToolPad already, the new Tool replaces the currently displayed one.

Selecting A Tool From The ToolPad

Select the Toolize button by clicking on it once. The mouse becomes a wrench with a note in its mouth.

To select a Tool in the ToolPad, click on the ToolPad a second time, while holding the mouse down. A menu of sixteen Tools appears under the mouse. Select the one you want by moving the pointer to it and lifting up.

Editing A Tool In The ToolPad

To edit the parameters of the Tool currently displayed in the ToolPad, select Edit PadTool Controls... from the Display Options Window or press down the SHIFT key and click on the ToolPad.

The Control window for the selected Tool opens, if such a window exists. There you can set the variables determining the Tool's behavior. It isn't necessary to close a Control window before using the Tool. You can continue to make adjustments while you use the Tool.

Using The Tool

Tools work in three ways in the Graphic Editor. They process all notes between the Edit Flags; they process all notes within the Bounding Box; or they effect individual notes.

Once you select the ToolPad, the Tool processes any notes you touch with the wrench. Just drag the wrench through the notes to affect them immediately.

Although Toolizing individual notes may appear somewhat peculiar at first, it's an extremely useful feature. Tools can quantize, transpose, modulate, filter, echo, invert, and do much more on a note-by-note basis.

To process all notes between the Edit Flags, first drag them to border the range of notes you'd like to Toolize. Then, select the Toolize or Selectively Toolize commands from the Edit menu. We'll discuss Toolizing with the Edit Flags in depth later in this chapter.

You may also use the Bounding Box to Toolize or Selectively Toolize a group of notes. Click down with the mouse and draw a box around the notes you'd like to Toolize.

Magnifying Notes



Use the Magnifying Glass to analyze and modify notes. The Magnifying Glass allows you to operate on a note's values by typing them in specifically.

When you select the Magnify button the Magnify window opens.



The Magnify window displays all of the properties of any note that you touch with the mouse and lets you edit them. Use the left and right arrow keys to move from note to note. Use the up and down arrow keys to move through all of the MIDI events in chronological order.

NOTE → The Graphic Editor window must be activated in order to use the arrow keys, not the Magnification window.

The Time Field

The first field in the Magnify Window, "Time," indicates the time in measures, beats, and clocks of the note. The second field, "HMSF," indicates the time in SMPTE format (Hours, Minutes, Seconds, Frames). To change the time, click on either line with the mouse and enter a new time. Press the Return key to indicate that you've finished and the note jumps to the new time.

CHAPTER EIGHT

The Note Information Fields

Three information fields, "Note," "Velo," and "Leng," follow. The first indicates the note value as a key and octave, e.g., "A3," for A in the third octave. The second indicates the velocity, how hard you played the note. Often, this translates to note volume. The last field, "Leng," denotes the length of the note in measures, beats, and clocks.

NOTE → Press the Return or Enter keys on your Amiga keyboard after you change a line to confirm the change.

Undoing, Updating, and Aborting

Any changes that you make while in the Graphic Editor do not take effect until you either choose the Update command from the Edit menu or close the Graphic Editor.

NOTE → If you haven't updated the Track but you'd like to hear your edits along with the other Tracks, enable the Perform All Tracks option in the Prefs menu and click on the Speaker button.

Of course, if you don't like your edits, you can close the Editor with no changes made to the Track by selecting the Abort command in the Edit menu.

Finally, if you make a single mistake while editing you don't necessarily want to Abort the entire editing session. Select the Undo command from the Edit menu to undo your last edit.

Here's a rundown of the Edit menu commands:

Undo (Right Amiga - U)

Use Undo in the Edit menu to return your Sequence to its state prior to the last edit operation. In addition to undoing any of the commands in the Edit menu, Undo works on all of the mouse-based editing operations, such as inserting, dragging, and altering Events.

Update (Right Amiga - Z)

Use Update in the Edit menu to update the Tracks window. In this manner, your changes are integrated into the Song without closing the window.

Abort (Right Amiga - Q)

Use Abort in the Edit menu to abort the editing process and revert your Track to its condition at the last Update (or before opening its Graphic Editor). The Graphic Editor window closes without updating the Track.

Auditioning Your Edit

In the Edit window, you have the option of hearing notes as you enter or drag them. Also, you can listen to the visible portion of your music, or listen to the portion from one Edit Flag to the other. You can hear these portions by themselves, or in context with the other Tracks you've recorded.

Hearing Notes As They Are Entered Or Dragged

If you set the Play Notes flag in the Prefs menu, every time you enter, drag, or Toolize a note, you will hear it. Bars&Pipes Professional sends the note from the Graphic Editor out through the Output side of the Track's PipeLine. If this option is not selected, the editing process is silent.

Listening To The Displayed Section



To listen to the portion of your Song displayed in the editor window, click the Speaker button. You can use the Sizing option or the Zoom In/Zoom Out buttons to control how much of your Song Bars&Pipes Professional plays.

Listening To The Portion Between The Edit Flags

Choose the Listen option in the Edit menu to play the music from the left Edit flag to the right Edit flag.

Hearing Edits In Context With Other Tracks

Choose the Perform All Tracks option in the Prefs menu. When you click on the Speaker or choose the Listen option, the Editor plays all of the Tracks along with the music in the Graphic Editor. Otherwise, if you do not select this option, the Editor plays only the notes in its window.

Performing With The Transport Controls

You can also listen to your edits in context by clicking on the Start button in the Transport Controls, starting the Sequencer. However, this plays from the Track, not the Edit buffer.

NOTE → This provides a valuable way to compare your edits before and after. Play from the Transport Controls to hear the music prior to opening the Edit window. Enable Perform All Tracks and click on the Speaker button to hear the music with the new edits in place.

Scrolling With The Sequencer Performance

Select Scroll With Performance from the Display menu if you'd like the Sequence Display to scroll along when you play from the Transport Controls.

CHAPTER EIGHT

Viewing Your Edit With Other Tracks In The Background

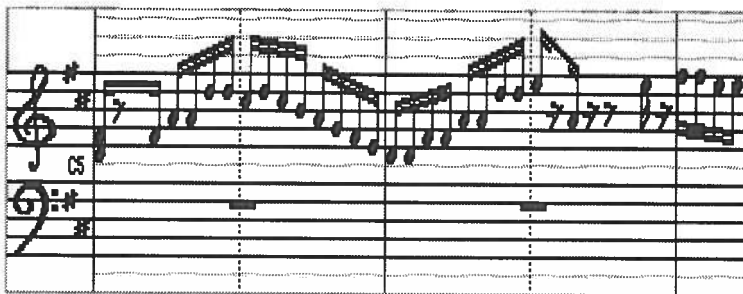
You can view other Tracks in the background of the Graphic Editor's Hybrid Staff and Piano Roll displays. To do so, go to the Tracks window and create a Group composed of the Track you are editing and the Tracks you'd like to see in the background. Once the Group is active, the extra Tracks display in grey in the background of the Graphic Editor. This feature allows you to compare notes in one Track with notes in others.

NOTE → Please see Chapter 19, *Advanced Sequencing*, for information on creating and using Groups.

Notation

Displaying Notation

When you select Staff-Notation from the Show menu, Bars&Pipes Professional displays the notes on a traditional treble and bass clef in standard musical format.



Bars&Pipes Professional marks accidentals, those notes which fall outside of the selected key, with sharps or flats. If you haven't defined a key, the Staff defaults to the key of C MAJOR (no standard notes sharpened or flattened).

NOTE → The Edit window refreshes after each editing operation whenever Staff-Notation is activated.

The Notation Resolution

When you select Staff - Notation, Bars&Pipes Professional creates rests and ties on the fly. Bars&Pipes Professional uses the duration of each note and the notation resolution to determine what the music looks like. The notation resolution is the smallest note value (eighth, sixteenth, etc.) that Bars&Pipes Professional displays.

You can control the resolution of the notation by selecting Resolution from the Notation menu.

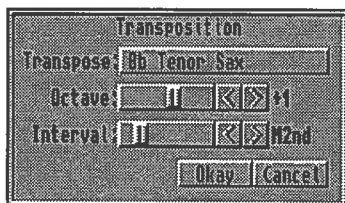
By default, Bars&Pipes Professional selects a sixteenth note resolution. Always choose a resolution that corresponds to the shortest note in the Track. Otherwise, Bars&Pipes Professional displays the note at the selected resolution, which means that shorter notes may run together. On the other hand, if you set the resolution too small, Bars&Pipes Professional can add unnecessary fractions of notes that muddle the page.

NOTE → Bars&Pipes Professional plays the notes as you have composed them, even if the selected Resolution causes them to display improperly.

Notation Transposition

Bars&Pipes Professional supports two different key types: Concert Key and Transposed Key. Transposed Key applies to those instruments that require transposition, e.g., Eb Alto Sax or Bb Clarinet. If you select a Transposed Key for a particular Track, you have the option of displaying it either in Concert Key or Transposed Key.

To assign a Transposed Key to a Track, select Transposition... from the Notation menu. This opens the Transposition requester.



Most of the time, you'll be using the Transposition Type button. When you click down on this button, Bars&Pipes Professional opens a pop-up menu containing a list of all popular instruments.

If you are writing for an instrument that is not in the list (e.g., piccolo trumpet), select Custom from the list. Then adjust the Octave and Interval sliders to the desired transposition. The Octave slider steps the transposition by octaves; the Interval slider controls the interval within an octave, e.g., a major third or minor sixth. You can also alter any of the instrument presets in the list.

To switch the display of a Track to Concert or Transposition Key, select Notation... from the Display Options menu.

CHAPTER EIGHT

Updating The Notation Display

In certain situations, typically after a lot of editing, the Notation display may contain a few errors. To refresh the Notation display, use the Update Transcription command found in the Notation menu. Bars&Pipes Professional recalculates where to place ties and rests, then redisplay the Track's Notation Staff.

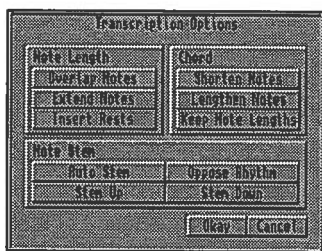
Transcribing Notation

The Transcribe option in the Notation menu goes one step further than the Update command. It commands Bars&Pipes Professional to recalculate the notation values of the notes themselves. It uses the value chosen in the Resolution... option to determine the smallest note that may be displayed. It also uses the options in the Transcription Options requester to determine how it addresses various transcription issues.

You can transcribe the entire Track, or just the portion of the Track between the Edit window's Edit Flags by choosing All or Between Flags respectively. Bars&Pipes Professional then calculates the notation value for each note, and insert rests appropriately.

Transcription Options...

The Transcription Option requester controls the way Bars&Pipes Professional transcribes music. Open it by selecting the Transcription Options command in the Notation menu.



The Transcription Options requester contains three categories of buttons: Note length options, Note stem options, and Chord options.

The Note length buttons help Bars&Pipes Professional decide how to represent a note's length. The following lists each Note length option in detail:

Overlap Notes

When you select Overlap Notes, the Transcribe command handles overlapping notes by creating tied notes. Otherwise, the Transcribe command truncates the first note before starting the second. By default,

Overlap Notes is off for a cleaner, though slightly less accurate, representation.

Extend Notes

When you select the Extend Notes option, the Transcribe command extends each note to the next note or beat, whichever comes first. This option makes the display cleaner because it minimizes the use of rests.

Insert Rests

When you select the Insert Rests option, the Transcribe command displays rests. Otherwise, rests will not be transcribed. By default, this option is on.

The Chord Options also control the way Bars&Pipes Professional transcribes music. Bars&Pipes Professional considers notes that begin at the same time, within the selected Resolution, to be members of the same chord. These options control how it decides to display notes in one chord.

The following Chord Options are mutually exclusive:

Shorten Notes

When you select the Insert Notes option, the Transcribe command causes all notes in a chord to be displayed as the smallest note in the chord.

Lengthen Notes

When you select the Lengthen Notes option, the Transcribe command causes all notes in a chord to be displayed as the longest note in the chord.

Keep Note Lengths

When you select the Keep Note Lengths option, the Transcribe command transcribes the notes in a chord to different lengths. It splits longer notes into tied notes.

The Note Stems options controls how Bars&Pipes Professional transcribes stem directions:

Auto Stem

The Auto Stem option lets Bars&Pipes Professional decide which directions to place the note stems.

Stem Up

The Stem Up option sets all note stems up.

Stem Down

The Stem Down option sets all notes stems down.

Oppose Rhythm

With the Oppose Rhythm option selected, Bars&Pipes Professional analyzes the music for two different rhythms in each measure. If there are two

CHAPTER EIGHT

different rhythms, it sets the stems up on the first rhythm and the stems down on the second. This option is useful in conjunction with printing notation.

Printing Notation

Choose the Print... command from the Notation menu to open the Print Requester for the Track. Please see chapter 11, Printing Notation, for more information.

Centering The Notation Staff

The center of the Notation Staff defaults to middle C, octave five on the MIDI keyboard. To change to another octave, use the Note Range... Staff Center command in the Display Options menu. The Staff Center requester opens.

In the box to the right of the Center: prompt, the requester displays the note currently at the center of the Staff. By default, the Staff centers around C5, the note C of the fifth octave.

To change the octave, click on the center note and hold the mouse down. Under the mouse, a pop-up menu appears with a choice of octaves. Move the mouse to the one that you want and lift up. The center note changes to C of the octave you choose.

The Auto Center button automatically calculates the center note and accommodates the range of notes displayed.

When you finish, press Okay to accept the new Staff Center, or Cancel, to leave it as it was.

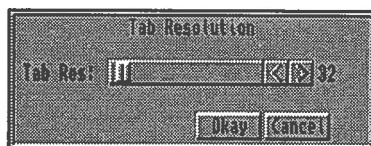
Tablature

Displaying Tablature

When you select Tablature from the Show menu, Bars&Pipes Professional displays note pitches as fret numbers on guitar strings. The open string note value of each string, which can be changed, is shown on the left. To the left of that is either an ON or an OFF. This value is used by the Tabulate... menu option in the Tablature menu. If a string is ON, it may have notes assigned to it. Otherwise, notes are not be assigned to it.

Setting The Tablature Resolution

Use the Set Tablature Resolution command to control how Bars&Pipes Professional spreads notes across the strings. This opens the Tablature Resolution requester.



Since tablature is not concerned with durations of notes, every note could potentially be transcribed to the same string (provided that the pitch of the note exists on the string).

Notes which sound simultaneously obviously need to be transcribed to different strings in order to be played simultaneously. Notes which do not sound simultaneously can be played on the same string, one after another.

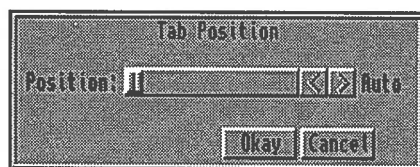
The larger the Tablature Resolution, the more notes Bars&Pipes Professional attempts to transcribe simultaneously. This value is measured in clocks. When Bars&Pipes Professional transcribes one note, it goes on to the next note and the next note, filling up each of the six guitar strings.

Once Bars&Pipes Professional has looked ahead of the first note by the number of clocks set by the Tablature Resolution, Bars&Pipes Professional starts over from scratch, filling each string with a note, one by one.

You can set the Tablature Resolution from one clock to 768 clocks.

Setting The Tablature Position

Use the Set Tablature Position requester to control which position, or fret, Bars&Pipes Professional uses during transcription. This value can be set to auto, or from one to 23.



With auto position chosen, Bars&Pipes Professional attempts to find the most comfortable position for the notes to be played in.

When a specific position is chosen, Bars&Pipes Professional attempts to place all notes within one fret below and four frets above the selected position.

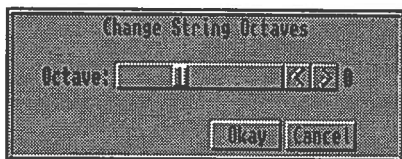
CHAPTER EIGHT

Transcribing Tablature

Use the Tabulate... command to transcribe your music to tablature. Choose All or Between Flags to transcribe all of the Track or just the portion between the Edit Flags.

Changing String Octaves

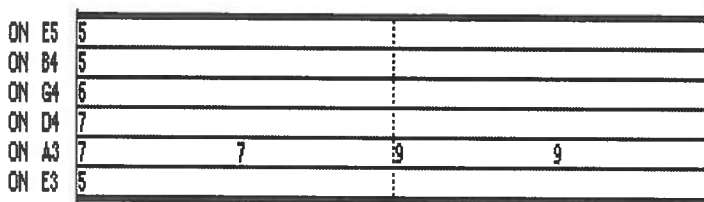
Open the Change String Octaves requester to change the octaves of all strings up or down.



This allows easier access to some transcriptions.

Enabling And Disabling Strings

Sometimes, you may want to transcribe a piece of music only to certain strings. Use the ON/OFF toggle to do so. Click with the Magic Wand on the ON/OFF to toggle between the two.



NOTE → Even though a string may be disabled for transcription, you can still drag or Input a note by hand onto that string.

★ **TIP** ★ MIDI guitarists can use this feature to get an accurate transcription of what the play. (Please see below.)

Changing Open String Notes

Click with the Magic Wand on the open string note value, and drag the mouse up and down to change the open string note value.

Creating A Note In Tablature

To create a note in tablature, click in the tab area with the Pencil. A number appears, indicating the fret number. To set the pitch to the desired note,

continue by dragging the mouse up or down to change the number to the correct fret. The duration of the note created is equal to the default note value.

Editing A Note In Tablature

Only the pitch of a note can be changed in Tablature, not the duration. Use the Magic Wand to change the note pitch of existing notes. Click on the note's fret number with the Wand; then drag the mouse up and down to change the fret number. To change the duration, use the Wand in the Piano Roll or Hybrid Notation displays. To change the note velocity, use the Wand in the Velocity display.

Creating An Accurate Transcription

If you record from a MIDI guitar, Bars&Pipes Professional can create an accurate transcription of what you play. Set up Bars&Pipes Professional to record each string on a separate Track, using the multiple-in preferences option, and have your MIDI guitar output each string on a different MIDI channel.

After recording, go into each Track's Edit window. Display Tablature, and set the ON/OFF toggles for each string so that only the correct string is ON, and all others are OFF. Choose the Tabulate... option from the Tablature menu to transcribe the music to the string. This sets each Track to tabulate all of its notes on only the chosen string.

Once you've finished with all six strings, close each Edit window. Create a Group out of the six Tracks, and use the Merge option in the Group menu to merge all six Tracks into one Track. Each note retains its string identity. When you look at the Tablature for the merged Track, you will see an accurate transcription of what you've played.

NOTE → Please see Chapter 19, *Advanced Sequencing*, for information on creating and using Groups.

Cut and Paste Editing

The first menu on the left in the Graphic Editor window is the Edit menu. Most operations in this menu work on the section between the Edit flags. The Edit flags are the purple triangles above the Sequence Display.

We'll refer to the section between the Flags as the Clip. A Clip includes all Events and Parameters which occur between the two Flags. You can drag the Edit flags to any location, and then cut, copy, paste and place Clips into the Clip buffer or, if it is open, the ClipBoard.

NOTE → The ClipBoard is explained in the multi-track Editing chapter.

CHAPTER EIGHT

To set an Edit Flag, click down on it and drag. If you drag beyond the edge of the display, it scrolls. The Edit Flags follow the same rules for alignment as the Flags in the Tracks window; when you lift up on the Flag, it jumps to the leftmost alignment boundary. By default, alignment is set to every measure. Change the alignment by selecting from the Align With... option in the Prefs menu. Alternatively, set the alignment with the alignment buttons in the Set Flags window.

Let's look at each edit command in the Edit menu:

Cut (Right Amiga - X)

Use the Cut command to cut a Clip from your Sequence. Doing so removes the section between the Edit Flags. Everything to the right of the section shifts to the left Edit Flag. You can then use the Paste command to insert the Clip elsewhere in your Track. If the ClipBoard window is open, the Clip displays in it. Use this if you'd like to Cut and Paste between multiple Edit windows. When the ClipBoard window is closed, the Clip remains hidden for use within the same Track.

Copy (Right Amiga - C)

Use the Copy command to copy a Clip without actually removing it. Nothing visibly happens, but the section between the Edit Flags becomes a Clip, available for Pasting. If the ClipBoard window is open, the Clip appears in it.

Paste (Right Amiga - P)

Use the Paste command to insert a Clip after the placement of the left Edit flag. If the ClipBoard window is open, the Paste command uses the currently selected Clip in the ClipBoard. Otherwise, it uses the result of the last Cut or Copy operation from the same Edit window.

You may do multiple Paste operations with the same Clip. The Clip remains the same until the next Cut or Copy command.

Mix (Right Amiga - M)

Use Mix to merge a Clip on top of a section. Starting at the left Edit Flag, Bars&Pipes Professional mixes in Events such as notes, pitch bends, and after-touches, but ignores Parameters such as Chords, Rhythms, etc. Once again, if the ClipBoard window is open, the Mix command uses the currently selected Clip in the ClipBoard. Otherwise, it uses the result of the last Cut or Copy operation from the same Edit window.

Erase (Right Amiga - E)

Use Erase to clear the section between the left and right Edit Flags. All Events disappear, which leaves your Sequence silent during this section. Erase is different from the Cut command, in that the section to the right of the Clip is *not* shifted over to the left Edit Flag and nothing is placed in the ClipBoard for later Paste or Mix operations.

Insert (Right Amiga - I)

Use Insert to insert a blank space in your music between the Edit Flags. This command comes in handy when adding a section somewhere in the middle of the Sequence. Insert the section, then use whatever methods you prefer to fill the gap with music.

Delete (Right Amiga - D)

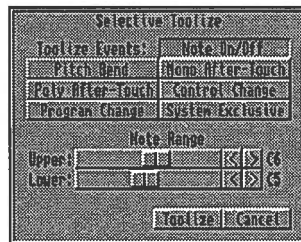
To delete a section between the right and left Edit flags, use the Delete command. This command operates identically to the Cut command, but does not place the deleted section into the Clip buffer or ClipBoard.

Toolize (Right Amiga - T)

Use Toolize to process the Clip with the currently selected Tool in the ToolPad.

Selective Toolize

Use the Selective Toolize command to selectively Toolize only certain events and note ranges between the two Edit Flags. When you select this option, a requester appears.



Highlight in red the MIDI event types you want to Toolize. If you select Note On/Off, you may select a note range with the two sliders.

Once you've set the parameters, select the Toolize button. The Tool in the ToolPad processes all activated event types and, if Note On/Off is activated, all notes between the upper and lower limits inclusive.

CHAPTER EIGHT

Repeat... (Right Amiga - R)

Use Repeat to duplicate a section of your Sequence. This command makes multiple copies of the section between the Edit Flags and inserts them into the Sequence.

When you select the Repeat command from the Edit menu, the Repeat requester opens. enter the number of repeats, then select Okay or Cancel.

Listen (Right Amiga - L)

Use Listen to preview everything in the section between the Edit Flags. Bars&Pipes Professional plays all MIDI Events in the section at the current tempo. Because the Events travel down the PipeLine, any Tools you have selected to process the Output PipeLine will process the section as it plays.

- ★ TIP ★ The Listen command is different from the Speaker button because the Listen command plays back everything between the Edit Flags. The Speaker button plays back everything that is visible in the Edit window.

If the Perform All Tracks option in the Prefs menu is selected, the Listen command plays all other Tracks in the sequence as well.

Boundaries... (Right Amiga - B)

Use Boundaries to enter the numerical values for the Edit Flags. Doing so opens a requester into which you can type positions for the two Flags.

Chapter 9

Overview

Notes aren't the only MIDI events you can record, edit and play. Bars&Pipes Professional lets you work with all MIDI channelized events, including Pitch Bend, Program Change, Control Change, and more.

Entering and editing other MIDI events is similar to entering and editing notes. In this chapter, we'll show you specifically how to enter and edit these special MIDI events.

Types of MIDI Events

When musical information travels through a MIDI cable, it's broken into individual commands that describe specific actions. These commands are commonly called "MIDI messages," or "MIDI events."

With Bars&Pipes Professional, you can record, play and edit all of the MIDI-channeled voice events. These events encompass all the commands that control how your synthesizer(s) can play: what notes to play, how loud to play them, how much pitch bend to include, etc. The MIDI channelled voice events embody the actual performance. Let's look at each:

Note On And Note Off Events

Note On and Note Off are by far the most important MIDI events. They describe when a note starts to play and when it ceases to do so.

From a MIDI perspective, Note On and Note Off are separate entities. When you press a key on your MIDI keyboard, it immediately sends a MIDI Note On event which states that the note is playing. Your MIDI keyboard has no way of knowing however, how long you'll sustain that note. Not until you lift your finger off the keyboard does it send a MIDI Note Off event. As you see, the performance of a note is described by MIDI as two separate occurrences.

In traditional music, a note is considered one event, not two. Bars&Pipes Professional's Sequencer combines Note On and Note Off to create one note event that describes when the note starts, as well as its duration. Even so, it's useful to remember that a note is broken into two parts when it leaves your keyboard, zings across MIDI to your Amiga, flows down a PipeLine, enters the Sequencer and combines into one.

Upon playback, a note is once again broken into two parts, which flow down the right side of the PipeLine, out through MIDI, and into your synthesizer.

CHAPTER NINE

Note Velocity Data

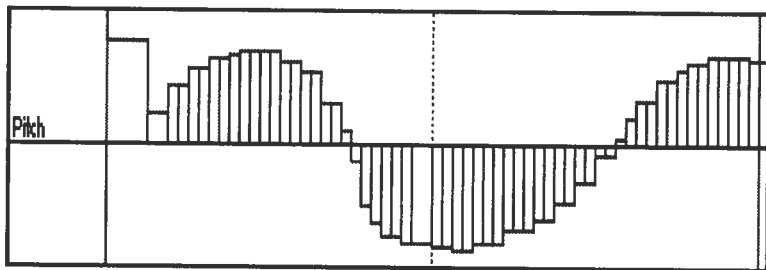
In addition to the actual value of the note, the MIDI Note On event also stores the note's velocity, i.e., how hard you strike the key to produce the note. Note Velocity translates into note emphasis or volume. To view and edit MIDI Note events, please see the preceding chapter.

Pitch Bend Events

Pitch Bend allows the performer to bend the pitch of a note. Since bending a note is an extremely powerful form of musical expression, almost all MIDI instruments provide it. The MIDI Pitch Bend event states how far out of pitch all notes are shifted at a specified point in time.

The MIDI Pitch Bend event can be confusing. While it states how far between two extremes the pitch is shifted, it has no knowledge of the boundaries of those extremes. It does not explicitly state, "Shift all notes up a half step." Instead, it says, "Shift all notes up one-eighth of the maximum distance by which you shift." The synthesizer produces the shifting pitch that decides how to interpret the bend. You can set the range on most synthesizers between one half step and a full octave for the Pitch Bend extremes.

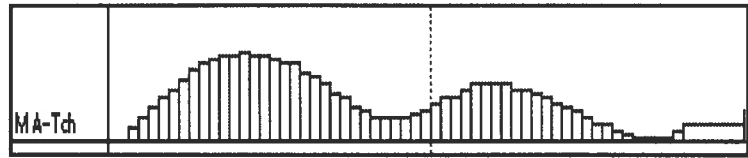
Bars&Pipes Professional draws each MIDI Pitch Bend event as a vertical line stemming from a central axis. If the pitch bend is positive, or sharp, the line extends up from the axis. If the pitch bend is negative, or flat, the line drops down. Although you can think of a pitch bend over time as a continuous curve, in MIDI terms it's a series of individual Pitch Bend events, which is why the resulting display looks more like a picket fence, the tops connected to describe the steps of the curve.



Mono After-Touch Events

Mono After-Touch measures how hard you press a key on a MIDI keyboard. The changing pressure is converted into numeric values which are constantly sent down the MIDI link. When these describe the overall pressure on the keyboard, as opposed to individual key pressure, they are

Mono After-Touch events. Just how the key pressure is interpreted is completely up to the performing synthesizer. Two typical uses are vibrato and volume control.



Bars&Pipes Professional draws each MIDI Mono After-Touch event as a vertical line and connects the tops with a horizontal line. The greater the key pressure, the higher the line.

Poly After-Touch Events

Poly After-Touch transmits key pressure on an individual key basis. Poly After-Touch MIDI events specify both the key being pressed and its current pressure. Unfortunately, since the hardware to do this is expensive, not many keyboards feature it. For the machines that do support it, Poly After-Touch can be used to describe note emphasis on a continually changing basis.

Bars&Pipes Professional displays Poly After-Touch events in the same way that it displays Mono After-Touch events: with a vertical line denoting pressure, however, since these events also specify which note each After-Touch influences, you can specify the range of notes as well. Do this by setting the Piano Roll note range with the Note Range command in the Display Option menu. All notes displayed in the Piano Roll have their After-Touch values displayed; all others do not.

Control Change Events

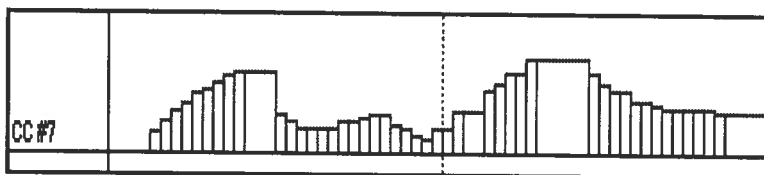
Control Change handles many different continuous controllers. Continuous controllers are hardware devices such as volume pedals, breath controllers, and modulation wheels. Every time you alter the position of one of these devices, the device sends a MIDI event reflecting the new value. These events are called MIDI Control Change events. The receiving synthesizer interprets this information to generate vibrato, change the timbre of a sound, or adjust the volume.

No limit exists on the scope of sound-producing parameters that can be controlled with these events. In order to support multiple controllers, the Control Change event carries two pieces of data, an identifier that specifies a controller, and the controller data itself.

CHAPTER NINE

The identifier, called the Control Change Number, can range from 0 to 127. For example, most synthesizers use Control Change #1 to set the Modulation Wheel and Control Change #7 to set the Volume. The data, the actual position of the wheel, pedal or other controller, is a number between 0 and 127.

Since 128 different Control Change numbers exist, you can't see them all at once. For example, if Bars&Pipes Professional were simultaneously to display a rising Volume Pedal event and a decreasing Modulation Wheel event, it would be impossible to make sense of the resulting mixture, much less edit it with the mouse. Bars&Pipes Professional shows, therefore, only one Control Change type at a time.



To select which Controller you'd like to view and edit, use the Control Change # option in the Display Options menu.

Program Change Events

Program Change tells your synthesizer what sound, or "patch," to use when playing notes. This event holds a number, from 0 to 127, which identifies which patch to use. For example, on your synthesizer, patch #2 could be a violin, patch #45, a marimba. If your synthesizer receives a Program Change event with patch #2, it plays the violin. Later, if it receives a Program Change with patch #45, it switches to a marimba.

Most synthesizers can switch between sounds instantly. It is possible, therefore, to embed Program Change events in your sequence that switch among several voices on the same synthesizer as it plays your piece of music. Embedding such Program Change events is a great way of squeezing more performance out of your available hardware.

Unfortunately, no correlation exists between Program Change patch IDs and specific sounds. Patch #2 may be a violin on one synthesizer and a dog bark on another. The General MIDI Standard is an attempt to remedy this problem. It standardizes the assignment of patches to instruments. For example, with all General MIDI instruments, Patch #0 is a Grand Piano.

Bars&Pipes Professional displays Program Change events as numbers, 0 through 127, or as Patch Names if they have been defined in the Define Patch Lists window. These numbers and names indicate to which patch the synthesizer switches when receiving the event.

| | | |
|---------|--|----------------|
| CC #1 |  | |
| Program | 6 Organ | 50 Sfx Brass 2 |

System Exclusive Events

System Exclusive events are special commands unique to the instrument (or product line). Manufacturers use System Exclusive events, for example, to set pitch bend ranges, transpose keys, send new patch data to the instrument, and many other functions. The user's manual for your instrument can tell you whether your instrument supports System Exclusive events, and what they do.

Unlike the previous commands, System Exclusive events are not generally considered performance events and they do not obey the same system of MIDI channels as performance events. However, they can be useful to record and play, so Bars&Pipes Professional's recording, playback, and editing mechanisms support them.

| | | |
|---------|-------------|----------------|
| Program | 6 Organ | 50 Sfx Brass 2 |
| SysEx | F0 42 66 5C | F0 5D 4C 70 |

Bars&Pipes Professional displays the first four bytes of a System Exclusive event in the strip. Entering new events (with the Pencil) or editing existing events (with the Wand) opens the System Exclusive requester, described in Chapter 13, System Exclusive.

Editing MIDI Events

Use the Graphic Editor to edit MIDI events. To open the Graphic Editor, double-click a specific Track. The Graphic Editor window opens, displaying your selected Track, starting with the measure you clicked on. Depending on which MIDI events you want to edit, it may or may not display all of the appropriate data. To select the events you'd like to edit, check them off in the Show menu of the Graphic Editor window.

You can toggle several Show menu options at once by holding down the right mouse button and pressing the left mouse button over each option you want to toggle. This feature can be a big timesaver, especially if you're changing five or six options.

The Command Buttons in the Graphic Editor

The first eight buttons from the left of the Graphic Editor are the Command Buttons. The Command buttons determine how you use the mouse: for dragging events, erasing events, or whatever. As you click each button with the mouse, the mouse's icon changes. Most of these buttons have keyboard equivalents as well. The following list describes each button briefly:

- The Magnifying Glass displays information about events you touch with the mouse.
- The Pencil, or function key "F1," draws new events.
- The Magic Wand, or function key "F2," alters events.
- The Hand, or function key "F3," grabs and drags events.
- The Duplicator, or function key "F4," creates an exact duplicate of the selected MIDI event.
- The Eraser, or function key "F5," deletes events.
- The ToolPad allows you to process MIDI events with certain Tools
- The Bounding Box, or function key "F6," working in conjunction with the Hand, Duplicate, Erase, and ToolPad buttons, enables you to draw a rectangle around a set of events and then move, duplicate, delete, or Toolize them.

Setting the Lock Grid

In the last chapter, Note Editing, we needed to set the Default Note before drawing notes. This is because notes have definite durations and volumes. Other types of MIDI events do not have this information. However, it may still be desirable to set some type of quantization for entering and dragging MIDI events.

Before drawing or dragging events, set the Lock grid. The Lock grid determines on what boundaries events fall when dragged or entered. Set the Lock options with the Lock to Default Note and Lock to Notation Resolution options in the Prefs menu.

No Lock Selected

If no Lock grid is selected, events can be dragged and entered at the resolution of the display, which is typically about 4 clock cycles (with 192 clocks per quarter note). In order to tweak the event time even further, use the Magnifying Glass or List Editor.

Lock To Default Note

Selecting Lock to Default Note in the Prefs menu causes events to lock to a grid with intervals corresponding to the Default Note value. The Default Note consists of a note value (eighth, quarter, etc.), and a modifier (triplet, dotted, or normal). Please see the previous chapter, Note Editing, for more information about setting the Default Note.

NOTE → The Default Note also contains an articulation (staccato, legato, etc.), and a dynamic level (pp through ff). However, these are only used with Note events, discussed in the previous chapter.

Lock To Notation Resolution

Selecting Lock to Notation Resolution in the Prefs menu cause events to lock to a grid with intervals corresponding to the Resolution value assigned in the Notation menu.

Lock To Rhythm

Selecting Lock to Rhythm in the Prefs menu causes events to lock to a grid corresponding to the current Rhythm template. Please see the next chapter, Song Parameters to learn more about Rhythm parameters.

Entering MIDI Events

Use the Pencil to enter MIDI events. To do so, click on the Pencil button, which highlights it. Notice that the mouse resembles a Pencil. Enter events by clicking down with the mouse where you want the first Event. Then drag it across the display to enter a trail of events. Here is what happens when you draw in each MIDI Event type:

Note On And Note Off Events

Please refer to Chapter 8, Note Editing, for more information.

Pitch Bend Events

To enter a Pitch Bend curve, click down with the Pencil where you'd like it to start and drag it to the right. Set the height of each Pitch Bend Event by the vertical position of the mouse. The current Default Note determines the distance between each Pitch Bend Event. If you'd like many events close together for high resolution, select a small Note Value. Sixty-fourth note resolution works very well.

CHAPTER NINE

Mono After-Touch Events

To enter a Mono After-Touch curve, click down with the Pencil and drag it to the right. Remember that the Default Note determines the distance between each Event.

Poly After-Touch Events

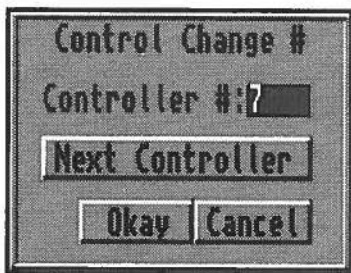
Drawing in the Poly After-Touch curve is a bit complex because each Poly After-Touch Event corresponds to a particular note. In other words, Bars&Pipes Professional organized Poly After-touch event according to its Poly After-Touch information and its pitch, denoted as a letter and an octave number, such as C5.

As you draw the curve with the Pencil, two factors govern which note corresponds with which Event. First, Bars&Pipes Professional includes only notes within the range of the Piano Roll. Second, Bars&Pipes Professional chooses the current or most recent note in the sequence. As a result, if the Piano Roll displays a C in octave 5, Poly After-Touch events drawn under that note have C5 integrated into them.

Control Change Events

To enter a Control Change curve, you must select the right Control Change number. Then click down with the Pencil and draw in the Control Change events.

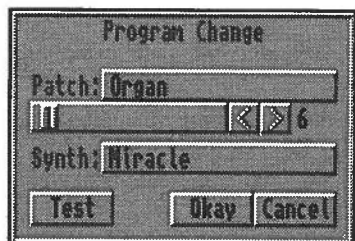
To avoid confusion, Bars&Pipes Professional displays only one Controller at a time. Use the Control Change # command from the Display Options menu to open the Control Change Number requester.



After the Controller #: prompt, enter the Controller number that you want Bars&Pipes Professional to display, or click on the Next Controller button to cycle through all the Control Change numbers in your Sequence. This way, you can quickly jump from one Control Change number to the next. Cycling is also useful for discovering what types of Control Change events are embedded in your Sequence.

Program Change Events

To enter each Program Change, select the Pencil and click in the Program Change region.



You can select a Program (or "Patch") by number, and, if a Patch List is installed, by name as well. To select by name, click the button after the Patch: prompt and hold. A scrolling list of available patch names appears under the mouse. Drag the mouse and click on your choice. To select by number, drag the slider under the Patch name.

The button after the Synth: prompt displays the currently selected Patch List. If you'd like to change it, click on the button and select a different Patch List from the scrolling list.

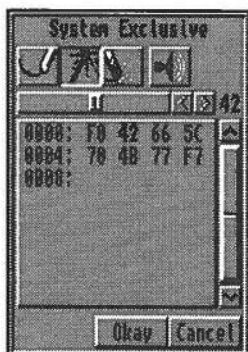
Create and install Patch Lists from the Patch List window, accessed from the Define menu.

NOTE → Each Track references one Patch List. Not only does this list define the names displayed in the Program Change requester and Program Change display, it also defines the Patch List used by the Quick Patch Tool.

System Exclusive Events

To enter a System Exclusive event, select the Pencil and click in the System Exclusive region. This opens the System Exclusive requester, described in detail in Chapter 13, System Exclusive.

CHAPTER NINE



Altering MIDI Events

Once you enter events, you can alter them. To the right of the Pencil sits the Magic Wand. Once you select the Magic Wand, you can alter the events with the mouse. Click down and pass it over the events you want to change and their heights magically conform to the path of the mouse. Notice that the Magic Wand draws a line as the events change shape.

This holds true for all MIDI Event types except for the Program Change and System Exclusive events. To alter one of these events, touch the event line with the Magic Wand. The Program Change requester or System Exclusive requester appears, which allows you to alter the event data.

Dragging MIDI Events

If you select the Hand button, you can use it to drag events forward and backward in time. Because Bars&Pipes Professional displays most MIDI events as thin vertical lines, you're not required to position the mouse exactly over an Event before you click on it. Instead, click down the mouse and sweep it through the Event. The Event sticks to the mouse, which you can then drag to its destination.

All of the "Lock to" options in the Prefs menu operate on other MIDI events, just like note events. If you set the Lock to Default Note option in the Preferences menu, the item moves to a grid defined by the Default Note. For example, if the Default Note is a quarter note, everything you drag moves left or right at quarter note intervals. Select Lock to Resolution to lock to the Resolution assigned in the Notation menu. Select Lock to Rhythm to lock to the current Rhythm template.

You can also use the Right and Left Arrow keys to move events forward or backward in Song time.

Duplicating MIDI Events

To duplicate events, click on the Duplicator button or press function key "F5." When you click and drag an event, Bars&Pipes Professional creates a new event of the same type, with the same data, and places it at the destination.

Erasing MIDI Events

To erase events, choose the Erase button, which, when selected, causes the mouse to resemble an Eraser. Click down and drag the Eraser through MIDI events to delete them.

Toolizing MIDI Events

You can Toolize all MIDI events, although most Tools concentrate specifically on Note events. Exceptions to this rule are the Delay and Echo Tools, which work on all Event types, and the Modulation, Flip, and Inverter Tools, which do their work on both Poly After-Touch and Note events.

Toolizing other MIDI events is similar to Toolizing Note events. Please see the previous chapter, Note Editing, for more information on Toolizing.

Boxing MIDI Events

You can select some of the Command buttons in conjunction with the Bounding Box. When you use the Bounding Box, you affect everything within it.

To draw the box, click down where you'd like one corner of the box to be and drag the mouse to the opposite corner. A box grows as your mouse travels. The box does not cross boundaries between data displays. Thus, you can't draw a box that encompasses Pitch Bend events as well as Mono After-Touch events.

CHAPTER NINE

The Bounding Box works with the following four Command buttons:

The Hand Button

The Hand drags everything in the box with the mouse. Once you create the box, click down on it a second time and drag it. All MIDI events in the box move with the mouse.

The Duplicate Button

The Duplicator duplicates everything in the box. Once you create the box, click down on it and drag it. A copy of the selected MIDI events moves with the mouse.

The Erase Button

The Eraser erases every MIDI Event within the box, once you lift up on the mouse.

The ToolPad

The ToolPad Toolizes all events within the box with the currently selected Tool.

Magnifying MIDI Events

When you select the Magnify button, the Magnify window opens and the mouse resembles a magnifying glass. The Magnify window displays data which can be edited, about each MIDI Event currently being touched with the mouse. Use the Right and Left Arrow keys on your Amiga keyboard to move through the selected event types one by one. Use the Up and Down Arrow keys to move to the event which occurs next chronologically. Bars&Pipes Professional displays the type of event in the Title bar of the Magnify window.

The first field in the Magnify window, labeled "Time," lists the time in measures, beats, and clocks. The second field, labeled "HMSF," lists the time in SMPTE format. If you click in either line with the mouse, you can change the time by entering a new one. Press the Return key when you complete the line. This causes the Event to jump to the new time.

All of the other lines differ depending on the type of MIDI Event. Remember, after you edit any of these lines, you must press the Return key to register the change. Here's a listing of what each Event's Magnify window displays:

Pitch Bend Events

Pitch Bend has one line, "Bend," which displays a numeric value for the bend.



The maximum positive pitch bend is 8191. The maximum negative bend is -8192. A positive bend makes the music play up in pitch, while a negative bend makes it flat.

Mono After-Touch Events

Mono After-Touch has one line, "Pres," which represents the key pressure.



The numbers range from 0, for no pressure, to 127, for extreme pressure.

Poly After-Touch Events

Poly After-Touch has two fields, "Note" and "Pres."



Poly After-Touch has two fields, "Note" and "Pres." "Note" identifies the key being pressed, while "Pres" shows the pressure as a number between 0 and 127.

Control Change Events

Control Change has two fields, "CC #" and "Data."

CHAPTER NINE



122 different Control Change numbers exist. The first line specifies which controller this Event addresses. The second provides the data, a number between 0 and 127.

Program Change Events



Program Change has one field, "Ptch," which is a patch selection number between 0 and 127.

System Exclusive Events

System Exclusive has three fields, "Time," "HMSF," and "Data." Clicking in the Data field opens the System Exclusive requester.



Chapter 10

Overview

Song Parameters describe your music in terms more sophisticated than MIDI events. They provide the foundation for your composition.

Song Parameters do not affect your composition directly. Instead, they are used by Tools, Accessories, and other functions to indirectly effect or further illuminate your composition. For instance, Time Signatures affect the display and printout of notation. Chords can be used in conjunction with the Chord Player Tool. Dynamics can be used with the Phrase Shaper Tool.

There are two different uses for Song Parameters: the Master Parameters, which characterize your Song as a whole, and the Track Parameters, which override the Master Parameters and work on a Track-by-Track basis.

Song Parameters are edited in the same Graphic Editor you've been using in the two previous chapters.

To edit the Master Song Parameters, open the Graphic Editor from the Windows menu by selecting Master Parameters. To edit the Song Parameters for any Track, double-click on the Track's sequence display in the Tracks window.

In the Graphic Editor window, Bars&Pipes Professional displays each Parameter in a band that runs from left to right. On the left side of each band is the name of the Parameter.

Select which Parameters you'd like to see from the Show menu.

Since the display can't possibly show all Notes, Parameters and Events at once, a scroll bar on the right enables you to scroll up and down.

An Explanation of Each Parameter

Six different Song Parameters exist. Before we discuss how to enter and edit them, let's consider how they relate to music in general:

Lyrics

Lyrics are words which accompany music. They exist in rock, blues, opera, pop, jazz, heavy metal, church music and many other musical forms. Lyrics can reinforce a composition's tone or contradict it altogether. They, as well as the meter, rhyme scheme, and rhythm you choose, can complement the music and further its meaning.

CHAPTER TEN

Recognizing that not all music is purely instrumental, Bars&Pipes Professional allows you to enter lyrics directly above the measures in which they occur.

You can use the printing Accessory, "Follow the Leader," to print your Lyrics. Also, if you save your Song in MIDI File Format with the "sMerFF" Accessory, sMerFF saves the lyrics so that notation programs that read MIDI File Format can display your lyrics with the music. The Graphic Editor displays each word positioned in its appropriate measure.

Chords

Chords consist of three or more notes played at once. Many types exist, but the most common in popular music are major and minor chords and derivations thereof. Basic chords can be formed by taking the first three of every other note in a scale and playing them simultaneously. Sound confusing? Let's look at an example:

A "C major" scale consists of the notes "C,D,E,F,G,A,B,C." To form a triad (a chord with only three notes) in this key, pick a root note (the bottom of the chord) and build up from it by choosing every other note in the scale. A D triad in the key of C consists of the notes D, F and A. An F triad in the key of C consists of the notes F, A, and C. By skipping every other note, you form basic triads within a key.

Every triad or chord conveys a certain emotional tone. Minor chords are often used to project sadness, anger or seriousness, while major chords tend to sound happy and pure. Since a major scale contains seven distinct notes, seven basic triads exist within the scale. In other words, a triad can be constructed by using each note of the scale as the root note. CEG, DFA, EGB, and FAC are the first four triads in the key of C.

More specifically, rules govern the "flavor" of each triad as it relates to a key. In a major scale, for example, the triad built on the second note in the scale is always minor. The triad built on the third note is minor, too, but the triad built on the fourth note is major.

If you have a keyboard available, play the triads by moving note by note up the C major scale and you can hear the differences in tonal quality. Some triads are major; others, minor. (The triad built on the seventh note is "diminished" in quality, but since this manual has space limitations, we won't branch into aspects of music theory that would explain this.) Major triads are based on the interval formula, "root note + two whole steps + a whole step and a half." Minor triads are based on the formula "root note + a whole step and a half + two whole steps."

The Chords option presents an assortment of chord types including major, augmented, major7, major6, dominant7, minor, minor6, minor+5, minor6, minor7, minorMA7, diminished, minor7-5, diminishedMA7, dominant 7-5,

major9, dominant7-9, dominant9+5, dominant7-9+5, and the list goes on. Should you fail to find one to your liking, create your own chords in the Define Chords window.

Although Bars&Pipes Professional doesn't play chords automatically, they provide valuable information that can be used by Tools to assist in the composing process. Once chords are entered into a Song, Tools come into play that make sophisticated musical decisions based upon your chord choices. As an illustration, the Accompany B Tool takes your chords and hammers out a rhythmic accompaniment. The "Follow the Leader" Accessory prints your chord changes.

Bars&Pipes Professional displays the root note followed by the chord type. For instance, the major chord CEG is shown as C MAJOR.

Key & Scale/Mode

Key & Scale/Mode indicates the key, or tonal center, of a composition. The tonal center is the single note around which your music revolves. In the key of "C major," it is the note "C;" in the key "Ab minor," "Ab." For nearly every piece of music, a key can be ascertained and assigned. The key, and hence the key signature, provides a framework for composition.

Directly related to keys and key signatures are scales. A scale, in its simplest definition, is a series of notes ascending from a specific note. Every type of scale is formulaic in nature; each is determined by half-step and whole-step relationships, which stem from the tonal center. (On a piano, C, a white key, is a half step from C#, a black key, and a whole step from D, another white key. Although not every white key is a whole-step from the white key next to it and a half-step from the black key next to it, for the most part, this is true.)

To illustrate, the formula for a major scale begins with the tonal center and progresses a whole-step (denoted by "W"), W, half-step (denoted by "H"), W, W, W, H. (All the white keys in succession from C to C on a keyboard.) Minor scales are a bit trickier as there are several types.

Although most American music fits into either the Major or Minor scales, many other scales exist. Some of these are the Whole Tone, in which every note is a whole-step beyond its predecessor; the Chromatic, where every note is a half-step beyond its predecessor; the Pentatonic, containing only notes 1,2,4,5, and 6 of the major scale; and the Gypsy, whose formula is W, H, W+H, H, H, W+H.

Not only is Key & Scale/Mode useful for editing, since the Graphic Editor can display the key signature and accidentals on the Staff, it is also quite useful for Tools that work with your music. For example, the CounterPoint Tool creates a countermelody accompaniment by knowing your chosen note system and calculating the proper intervals according to the rules of first

CHAPTER TEN

species counterpoint. As with chords, Bars&Pipes Professional comes with a long list of preset scales and all of the classical modes. You are free, however, to design your own with the Define Scales window.

Bars&Pipes Professional displays the tonal center, or key, followed by the scale or mode name, e.g., C Major, Eb Minor, F# Blues. The Staff displays the key signatures for all major and minor scales as well as for all of the modes.

The Display Options menu provides the option of showing the Key & Scale/Mode on the Piano Roll. This command, Background... Key, shadows the current Key & Scale/Mode in a hazy purple. As a result, you can easily compose while staying within your chosen Key & Scale/Mode. Along the same lines, the Lock to Key option in the Preferences menu confines all notes you enter or edit into your chosen Key & Scale/Mode.

Rhythm

Rhythm, in its simplest form, conveys the motion of your music. Beats of varying lengths are organized into rhythmic patterns. Rhythms can be simple or complex, on the beat or off. Certain styles of music are noted first and foremost for their rhythmic form. For instance, Samba music is characterized by syncopated rhythmic patterns, where the beat is shifted to the upbeat, or second half of the beat, over a 2/4 meter, and Shuffle is known for its triplet-based feel in 4/4 time.

Armed with a particular rhythmic style along with the key and chord progressions, any capable musician can quickly construct a Song. Once again, some Tools can use rhythm to make intelligent decisions as they process your music. Accompany B is a good example. It combines the Rhythm and Chord parameters to play a chord pattern. No limit exists to the scope of conceivable rhythms, and although Bars&Pipes Professional does come with a set of pre-defined rhythms, you will almost certainly use the Define Rhythms window to create your own.

Bars&Pipes Professional displays each rhythm by name. If you select Background... Rhythm in the Display Options menu, Bars&Pipes Professional displays the Rhythm pattern in the background behind all the Parameters and MIDI Events. This pattern resembles a set of vertical bands. This gives you a visual cue for how the rhythm lines up with other events.

Use the Background... Rhythm option to analyze how your Rhythm relates to your Sequence. Keep this in mind: a Rhythm consists of Note events, which have durations. The durations determine the width of the bands, some of which may overlap.

Remember, Rhythms don't play anything by themselves. Used in conjunction with Chords and the Accompany B Tool, Rhythms can command Accompany B to play Chords at a defined pace and syncopation. The Groove Quantize Tool uses the Rhythm to lock a performance to the

Rhythm's timing. Please refer to the Music Tools chapter for more information.

Dynamics

Dynamics indicate the volume at which each section of music is played. If you're familiar with classical notation, you will recognize these markings as the following lower case letters: "pp," "p," "mp," "mf," "f," and "ff." These abbreviations stand for pianissimo (very soft), piano (soft), mezzo piano (medium soft), mezzo forte (medium loud), forte (loud) and fortissimo (very loud), respectively.

A crescendo gradually increases the volume. The inverse is true of a decrescendo or diminuendo. Without dynamic road signs, music sounds stagnant and lifeless. Dynamics focus attention on or away from various segments of a piece. Ironically, sometimes a quiet section of music is easier to hear than a loud one.

You can define the overall volume of your Song with the Dynamics Parameter. With dynamics, you can draw crescendos and decrescendos.

Bars&Pipes Professional shows the Dynamic curve as a set of points with lines drawn between them. Each point represents a dynamic setting; for example, mezzo piano (mp) or fortissimo (ff). The connecting line conveys the dynamic change over time between the two points. To show a dramatic crescendo across one measure, you might start the measure with a dynamic point labeled "pp" and end with a second, labeled "ff." The Editor automatically draws a line between them.

NOTE → Like all Song Parameters, Dynamics do nothing unless they are used in conjunction with a Tool. The Phrase Shaper Tool is a very simple, but powerful implementation of Dynamics. It takes each note, places it against the Dynamics curve, and assigns it the proper velocity.

Time Signature

A Time Signature appears at the beginning of a piece as two numbers, one above the other. The lower indicates the type of note that is used to measure each beat, (half note, quarter note, etc.), while the upper indicates the number of such beats per measure. 4/4 is by far the most common time signature.

Time signatures provide the basic rhythmic framework of a piece. Though most popular music, such as rock-n-roll, rhythm and blues, and funk, tends to be in symmetrical meters (2/4, 4/4, or 6/8), uneven meters (3/4, 5/4) often lend a fresh feel and unpredictability to music.

Bars&Pipes Professional uses traditional time signature notation and permits a different time signature to be assigned for every measure that

CHAPTER TEN

exists in a sequence. You can therefore experiment with a multiplicity of beat resolutions. Bars&Pipes Professional also permits different time signatures in different Tracks simultaneously.

Bars&Pipes Professional supports all standard time signatures; however, in keeping with the "one-size-fits-all principle," you can use time signatures as bizarre as 77/8 or 36/2. To enter a time signature, select one from the pre-determined palette or enter your own.

The Time Signature defined in the Master Parameters window is the main Time Signature displayed in the Tracks window. Please see the chapter, Track Editing, for more information. Individual Tracks can also contain their own Time Signatures that are different from the main Time Signature.

Two Important Considerations About Song Parameters

1. You do not have to use all the Parameters that Bars&Pipes Professional provides. Rarely would you use all six while composing a single piece of music. The organization of your Song, and more importantly, which Tools you use, dictate which Parameters are necessary and which are a waste of time.
2. Depending on how you use them, some Parameters may be more useful on a Track-by-Track basis, while others may be preferable in the Master Parameters window. Lyrics, Key, Rhythm and Time Signature usually belong to the entire composition. On the other hand, you may have different voices singing different lyrics or juxtapose different rhythms on individual Tracks.

★ TIP ★ As you add and edit Parameters, think about the appropriateness of their placement. Fortunately, it's quite easy to move Parameters between the Track and the Master Parameters windows, should you want to change them.

Bars&Pipes Professional follows a simple rule with all Parameters: when a Tool uses a Parameter to process a Track, it first checks the Track Parameters. If the required Parameter type is not represented, it refers to the Master Parameters for the data.

Editing the Master and Track Parameters

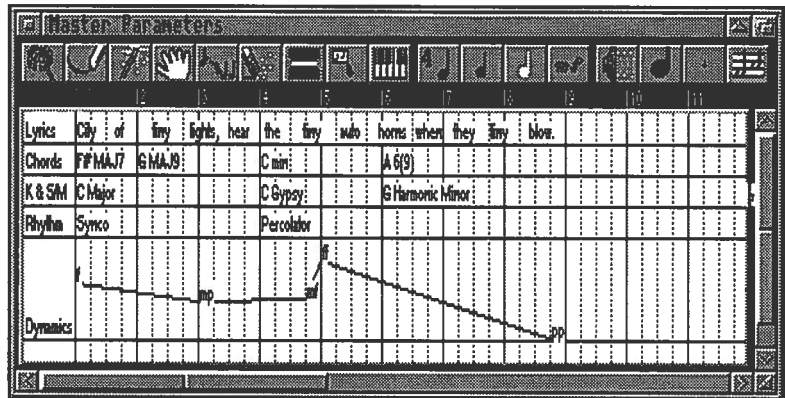
Two scenarios exist for editing Parameters: editing the Master Parameters or editing the Track Parameters.

Master Parameters define the guidelines used in your Song as a whole. For example, if you add Key and Scale/Mode to your Song, you can place it in the Master Parameters window, since usually every Track shares the same

EDITING SONG PARAMETERS

key. On the other hand, you may want separate Dynamic curves for each Track. In this case, use the Track Parameters on an individual Track basis.

To access the Master Parameters, select the Master Parameters option in the windows menu. To access the Parameters for an individual Track, open the Graphic Editor by double-clicking on the Sequencer.



The Master and Track Parameters share the same user interface. By default, Bars&Pipes Professional displays all Parameters when you open the Master Parameters window and none of the Track parameters when you open the Graphic Editor. To display the Master or Track Parameters of choice, select them from the Show menu of the Graphic Editor or Master Parameters window. (You'll notice that the Show menu enables only the Parameters when opening the menu from the Master Parameters window.) This lets you hide the parameters in one window that you're using in another.

You can toggle-select more than one parameter at a time by holding the right mouse button while the Show menu is open, then clicking the left mouse button over the parameters you want to toggle. This can save you some time whenever you change the parameters to display.

The Master Parameter Window Buttons

The Master Parameters window is actually the Graphic Editor with only the Song Parameters available for editing. Please refer to the Note Editing chapter for a thorough guide to this window.

CHAPTER TEN

The Command Buttons



The first nine buttons from the left are the Command Buttons. When you press each, the mouse's icon changes. Set these to determine how you use the mouse.

The command buttons in the Master Parameter window are the same as the command buttons in an Edit window. Please refer to Chapter 8, Note Editing, for more information about each command button.

The Lock Grid

Just like other MIDI Events, Song Parameters respond to the "Lock to" menu items in the Prefs menu. Please see the previous chapter, MIDI Events, for more information.

Entering Parameters

Parameters may be entered into either the Master Parameters window or an individual Edit window for a Track. Remember to activate the parameter you want to edit by selecting it in the Show menu.

To enter a parameter, click on the Pencil button or function key "F1." The mouse pointer becomes a Pencil. The way that the Pencil operates is determined by the following options in the Prefs menu.

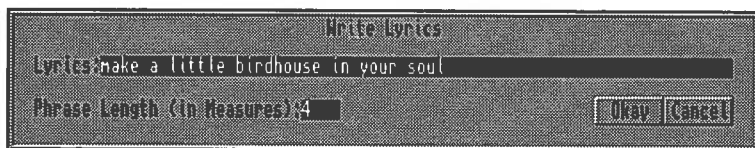
- If you choose the Drag With Pencil option, click down to enter a parameter and the Pencil becomes the Hand so that you can drag the parameter. Lift up on the mouse button when you are satisfied with the parameter's position.
- If you choose the Lock to Default Note option, entered parameters align to the Default Note interval. For instance, if your Default Note is an eighth note, then all parameters you enter correspond to eighth note increments in each measure.
- The Lock to Resolution option works just like the Lock to Default Notes option, except that it uses the Resolution value defined in the Notation menu.
- The Lock to Rhythm option works the same as the Lock to Default Note option, except that it conforms all parameters to the current rhythm template boundaries.

EDITING SONG PARAMETERS

Here is what happens when you draw in each Parameter type:

Lyrics

When you click the Pencil in the Lyrics region, the Lyrics Entry requester opens.



Lyrics must be entered in such a way that each word lines up at its proper position in the music.

If you arbitrarily place a complete sentence at the beginning of a line, the singer won't know on which beat to sing each word. However, opening the Lyrics Entry requester for every word would be time-consuming. So, the Lyric requester lets you enter a line of lyrics and then it breaks it up into individual lyric parameters.

To enter Lyrics in the Song Parameters, enter the entire sentence or phrase on the Lyrics: line. Then enter the number of measures over which this sentence or phrase occurs at the Measures: prompt.

When you press Okay, Bars&Pipes Professional breaks your sentence into its component words and spaces them equally across the number of measures you define. It places the first word at the point you clicked to open the requester.

You can also break words into syllables by placing a dash, followed by a space, between each syllable. Because each word or hyphenated syllable becomes a separate entity in your sequence, it can now be individually positioned to your taste.

| | | | | | | | | | | | | | |
|--------|------|----|------|---------|------|-----|------|------|-------|------|------|------|-------|
| Lyrics | City | of | tiny | lights, | hear | the | tiny | auto | horns | when | they | tiny | blow. |
|--------|------|----|------|---------|------|-----|------|------|-------|------|------|------|-------|

When you close the requester, you may find that some of the Lyrics are not exactly where you want them. Follow with the Hand to drag them into position.

Chords

To enter a Chord, click the Pencil on the Chord region and hold the mouse button down. An octave of piano keys appears under the mouse. Choose the root note of the chord by dragging the mouse to the note and lifting up.

CHAPTER TEN

The Graphic Editor then tries to choose an appropriate chord, given the current Key & Scale/Mode. However, if you have not selected a Key & Scale/Mode, or the note you chose is not within the selected Key & Scale/Mode, a second menu opens under the mouse. This features a list of chords from which to choose. Since this scrolling menu contains more chords than it displays, it has two arrows, one each at the top and bottom. If you move the mouse over an arrow, the chords scroll by. Move the mouse to the one you want and click down.



Remember, the Graphic Editor only opens the chord menu if it cannot find a triad that fits your selected Key & Scale/Mode. If you don't like its choice, you can always edit the chord with the Wand.

★ TIP ★ You can create your own Chords in the Define Chords window.

Key & Scale/Mode

Enter a Key and Scale or Mode as you would a Chord. Click the Pencil where the key change occurs and hold it down. Choose the key from the octave of piano keys and lift up.

A scrolling menu of Scales and Modes appears under the mouse. Move it to the scale or mode you desire and click down. Since the list of available scales is longer than the menu can show, move the mouse to the bottom arrow. It then scrolls the list up to reveal further choices.

If you selected a black key, a third menu with a sharp and a flat now appears under the mouse. This menu lets you choose whether sharps or flats are used to represent the note value. For example, if you choose the first black key to the right of a C, the sharp/flat menu appears. At this time, you must determine whether the selected note is a C# or a Db. Although these notes are identical in pitch, they are considered different notes and define different scales.



The Key & Scale/Mode Parameter always lines up on measure boundaries. If you place it anywhere else, it locks to the beginning of the measure. The first time you enter a Key & Scale/Mode, Bars&Pipes Professional places the entry at the first measure of the Song. Subsequent Key & Scale/Mode entries stay in the measure where you click the Pencil.

Rhythm

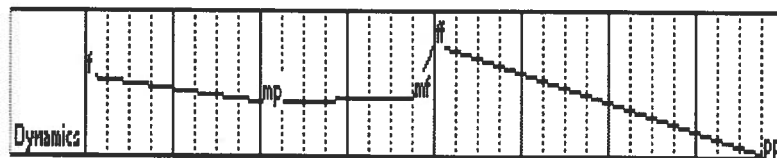
To enter a rhythm, click the Pencil on the Rhythm region and hold it down. A scrolling menu of available Rhythms appears under the mouse. Select the one you want and lift up. Choose from predefined rhythms or define your own in the Define Rhythms window.



Dynamics

Since Bars&Pipes Professional displays Dynamics as lines between points, you must enter both the beginning and end of the dynamic curve. To enter each point, click with the Pencil and hold it down. Depending on whether you've already entered a point, the following happens: If you've already entered a point, Bars&Pipes Professional displays the Dynamic Change pop-up menu. If you haven't yet entered a dynamic point, Bars&Pipes Professional places a point of identical value at the beginning of the Track or Song.

From this menu, choose whether the Dynamic change is Gradual or Immediate. If you choose Gradual, then the dynamic change happens gradually from the point which precedes the one you just entered. Notice that Bars&Pipes Professional draws a sloping line between the two dynamic levels. If you choose Immediate, the dynamic change is sudden. In this case, Bars&Pipes Professional draws a horizontal line that becomes vertical just before the volume change.

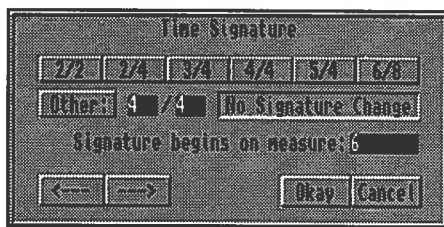


A point placed at the top of the Dynamics display indicates the loudest volume, while a point placed at the bottom, indicates the softest. For example, if you want a crescendo to occur within a four-measure time frame, set your original volume on the first of the four measures. Then set your destination volume at the end of the four measures. Bars&Pipes Professional automatically shows a line indicating a gradual increase in volume between the two points.

Time Signature

To enter a Time Signature change, click with the Pencil on its starting measure. The Time Signature requester then opens.

CHAPTER TEN



The Time Signature requester provides six standard Time Signatures and a method to define custom Time Signatures. The six buttons across the top feature the pre-defined Time Signatures. Click on your preference to select it.

If you don't find one that meets your needs, create your own by first typing the values for the Time Signature after the Other: prompt. Then click on Other to select it.

NOTE → It is important that you first enter the values, and then click on the Other button to activate it. Clicking the Other button first, and then typing in the values won't work.

By default, Bars&Pipes Professional displays the measure in which the Time Signature change occurs after the "Signature begins on measure:" prompt. This is the point where you clicked with the Pencil. Change the measure by editing this number.

You can also access the previous and next time signature changes. To go to the previous Time Signature change, click on the left arrow button in the Time Signature requester. The arrow finds the Time Signature prior to the one you are viewing and displays it, so that you can edit it. The right arrow button scans forward to the next Time Signature change.

If you create two adjacent, identical Time Signatures, Bars&Pipes Professional removes the second one. To illustrate, if you have 6/8 on measure 5, then place 6/8 on measure 4, Bars&Pipes Professional discards the 6/8 on measure 5.

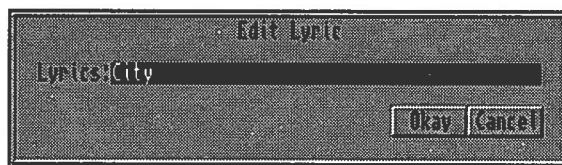
Altering Parameters

After you enter a Parameter, you may want to edit it. To the right of the Pencil on the menu Buttons is the Magic Wand. When this button is highlighted (function key "F2"), the mouse takes the shape of a Magic Wand. Selecting this button allows you to touch a Parameter with the mouse and alter it. Wave the Wand through the Parameter to change it. In all cases, this opens a menu or requester. Here's a run-down on how the mouse works with each Parameter:

EDITING SONG PARAMETERS

Lyrics

Touching a Lyric with the Magic Wand opens the Edit Lyric requester.



Edit the Lyric, then press the Okay button if you'd like to keep the change, or press Cancel to forget it.

Chords

Touching a Chord with the Magic Wand opens the piano keyboard under the mouse, which enables you to select a new root note for the chord. Hold the mouse down, roll it to your chord of choice and lift up. If you'd like to keep the current choice, just roll it off the keyboard to retain it.

The Chords list appears under the mouse. Unlike when you enter a Chord, this time Bars&Pipes Professional does not attempt to fit your choice into the selected Key & Scale/Mode. The scrolling menu of Chord choices always opens. Move the mouse to your choice and click on it. If you'd rather go with what you had before, roll the mouse off the menu and the chord reverts to its previous status.

Key & Scale/Mode

Edit a Key & Scale/Mode Parameter as you would a Chord. Touch it and a piano keyboard appears under the Magic Wand. Select the key by moving the mouse to the note and lifting up. Then select the Scale or Mode from the scrolling menu that appears under the mouse. Remember that, at any point, you can go with the original value by rolling the mouse off the menu. If you select a black key, the sharp/flat menu opens as is the case when defining a Key & Scale/Mode.

Rhythm

To change a Rhythm, touch the Rhythm's name. The scrolling list of available Rhythms appears under the mouse. Select your choice by moving the Magic Wand to it and lifting up on the button. To leave the Rhythm unchanged, roll the mouse off the menu.

Dynamic Marking

When you touch a Dynamic Marking with the Magic Wand, the Dynamic Change pop-up menu appears. From this menu, you can reselect the type of volume change, either Gradual or Immediate. If you choose Gradual, then

CHAPTER TEN

the dynamic change happens gradually from the point which precedes the one you just selected.

Notice that Bars&Pipes Professional draws a sloping line between the two dynamic levels. If you choose Immediate, the dynamic change is sudden. In this case, Bars&Pipes Professional draws a horizontal line that becomes vertical just before the volume change. To move a Dynamic Marking, use the Hand button.

Time Signature

Touch a Time Signature with the Magic Wand and the Time Signature requester opens. Change the Time Signature as desired and click on Okay to keep the change, or on Cancel, to abort.

Dragging Parameters

Select the Hand button (function key "F3") to use the mouse to drag Parameters around and reposition them. Highlighting this button transforms the mouse into a hand. You don't have to position the mouse directly over a Parameter before clicking on it. Instead, click down the mouse and sweep it through the Parameter. The Parameter sticks to the mouse, which you can then drag to the Parameter's new destination.

All of the "Lock to" options in the Prefs menu operate on Song Parameters, just like note events. For instance, if you set the Lock to Default Note option, the Parameter moves only in steps along a grid defined by the Default Note. For example, if the Default Note is a quarter note, everything you drag moves left or right at quarter note intervals. Please refer to Chapter 8, Note Editing, for more information.

You can drag all of the Parameters to the left or right. In addition to these directions, you can drag the Dynamic points up and down. Unlike the case with all other Parameters, you cannot drag one Dynamic point past another, which would create a Dynamic curve that doubles back on itself. If you've dragged a Dynamic Marking and want to change its slope, use the Magic Wand to access the Dynamic Change pop-up menu.

You can also use the Left and Right Arrow keys on your Amiga keyboard to drag Parameters left or right according to the default note grid.

Duplicating Parameters

To duplicate parameters, click on the Duplicator button or press function key "F4." When you click and drag a parameter, Bars&Pipes Professional creates a new parameter of the same type, with the same data, and places it at the destination. While dragging the parameter, the Duplicator works just

EDITING SONG PARAMETERS

like the Hand. Please see the previous section, Dragging Parameters, for more information.

Erasing Parameters

To use the mouse to erase Parameters, choose the Erase button (function key "F5"). Highlighting this button turns the mouse into an Eraser. Click down and drag the Eraser over Parameters to delete them.

Toolizing Parameters

You cannot use Tools to process Parameters directly; however, many Tools use Parameters as part of their design. As an example, the CounterPoint Tool uses the Key & Scale/Mode to select the correct intervals. The Phrase-Shaper Tool uses the Dynamics Curve to set Note velocities.

Whenever a Tool looks for a Parameter, it first checks in the Track with which it is working. If it finds no Parameter there, it consults the Master Parameters. If you have a Dynamic curve defined for Track A, but not for Track B, the Phrase-Shaper Tool uses Track A's Dynamic Curve to phrase notes on Track A, but uses the Master Dynamic curve to phrase Track B.

Boxing Parameters

The Bounding Box allows you to operate on more than one parameter at a time by drawing a box around a group of parameters. To select the Bounding Box, click on the Box button (function key "F6").

You can select the Hand, Duplicate, or Erase Buttons in conjunction with the Box button. When you select the Bounding Box, instead of directly touching Parameters with the mouse, you can draw a box around them to affect everything within the box.

To draw the box, click down on one corner of the area and drag the mouse to the opposite corner. A box grows as your mouse travels. The box does not cross boundaries between different Parameters; therefore, you can't draw a box around Lyrics and Chords together. Once you have enclosed what you want in the box, lift up on the mouse.

Depending on which Command button you select in conjunction with the Bounding Box, the following happens:

The Hand Button

Everything in the box drags with the Hand. Once you create the box, click down on the box a second time and drag it. All Parameters in the box move with the mouse.

CHAPTER TEN

The Duplicate Button

The Duplicate button works just like the Hand button, but creates a copy of the parameters rather than moving the selection.

The Erase Button

Once you lift up on the mouse, every Parameter within the box disappears when using the Erase button.

Magnifying Parameters

When you select the Magnify button, the Magnify window opens and the mouse pointer changes to a Magnifying Glass. The Magnify window displays information about each Parameter that you select with the mouse. Click on each line to edit it. The Title bar of the Magnify window displays the Parameter's name. Use the Right and Left Arrow keys to move through the parameters one by one.

The first line in the Magnify window lists the time in measures, beats, and clocks. To change a time, click in this field with the mouse and enter a new one. Press the Return or Enter keys on your Amiga keyboard when you finish and the Parameter jumps to the new time.

The second line lists the time in SMPTE format. You can change a time by editing either field; Bars&Pipes Professional automatically updates the other field to display the equivalent time.

The remaining lines in this window change according to the specific Parameter. Remember that after you finish editing a field in the Magnify window, you must press the Return key to register the change.

Lyrics

The Lyric Magnify window contains one field, "Lyric."



Because the Magnify window stays open while you go from lyric to lyric, editing this way is actually quicker than using the Magic Wand to change lyrics.

EDITING SONG PARAMETERS

Chords

The Chord Magnify window contains two fields, "Root" and "Chrd."



The first specifies the chord's root note; the second, the name of the chord. If you change the name of the chord, you must enter the new chord's exact name. The new chord must exist in the list of defined chords. If it does not, the original chord remains unchanged.

Key & Scale/Mode

The Key & Scale/Mode's Magnify window contains two fields, "Root" and "S/M."



The first lists the key; the second, the Scale or Mode associated with it. As with the Chord, the Scale or Mode name that you enter must exist, or Bars&Pipes Professional ignores it.

Rhythm

The Rhythm's Magnify window contains one field, "Name," which displays the name of the selected Rhythm.



CHAPTER TEN

If you want, enter a new one. Remember, the entered Rhythm must exist in the list of available Rhythms.

Dynamics

The Dynamics' Magnify window contains two fields, "Emph" and "=". "Emph" and "=" actually represent the same things. What differs is the way Bars&Pipes Professional describes them. "Emph" is the actual value of the Dynamic, or emphasis. This is a number from 0 to 127.



Below, "Emph," in the second box, is "=", the equivalent music notation, ranging from "pp" to "ff". Time Signature: The Time Signature's Magnify window contains two fields, "BPM" and "Beat." The first describes the number of beats per measure; the second, the value of the actual beat.

Time Signature

They Time Signature's Magnify window contains two fields, "BPM" and "Beat."



"BPM" stands for beats per measure. "Beat" stands for the note value that receives the beat.

Importing and Exporting Parameters

You can copy individual Parameter lists back and forth between the Master and Track Parameters. As an example, you may want to duplicate the Master Dynamic curve onto a Track, and then change it a bit to fit the character of the Track's part in the Song. Or, you may have a great set of

Chord changes in a Track and want to make them available to the other Tracks by placing them in the Master Parameters.

To copy in either direction, use the Master Parameters menu. This menu can only be accessed from the Graphic Editor window of an individual Track; you cannot copy from the Master Parameters window. If you haven't already done so, open the Graphic Editor window of the Track from which you want to import or export Parameters.

Importing Parameters Into A Track

To import a Parameter list from the Master Parameters to an individual Track's Parameters, select the Import submenu from the Master Parameters menu. Notice that you have six options, one for each category in the Parameters list. Select your preferred Parameter option and Bars&Pipes Professional automatically copies it from the Master Parameters to your Track.

Exporting Parameters From A Track

To export a Parameter list from the Track Parameters to the Master Parameters, select the Export submenu from the Master Parameters menu. Again, you have six options, one for each category in the Parameters list. Select your Parameter of choice and Bars&Pipes Professional copies it from your Track to the Master Parameters.

CHAPTER TEN

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Chapter 11

Overview

Bars&Pipes Professional provides several options for printing your composition in standard notation. You can print a concert or transposed score from the Song menu, a Group of Tracks from the Groups menu, or one part from either the Tracks menu or a Track's Graphic Editor window's Notation menu.

You can also save your music printout in standard notation as a graphics file. This file can be loaded and modified by paint programs such as Deluxe Paint from Electronic Arts.

Preparing to Print

Before you print a Track, you must first arrange things so that Bars&Pipes Professional prints to your specifications.

Selecting The Printer Driver

You must choose the correct printer driver in your Workbench Printer Preferences program. Be sure to set the graphics preferences for the printer driver, too.

NOTE → Setting the graphics preferences may require some experimentation. Please refer to your Amiga Users Manual for more information.

Managing Chip Memory

Printing requires chip (graphics) memory. Printing in high resolution mode requires more memory than printing in low resolution mode.

If you are unable to print because of low memory, try closing down all unnecessary windows and programs that might be using chip memory. Also, choose all of the memory savers in the Environment Preferences.

If you are still unable to print, you may need to get more memory. Fast RAM helps, but for the most part, increasing chip memory is needed. This requires an enhanced chip set. Please ask your Amiga dealer for more information about chip versus fast RAM.

Organizing Your Score

Before you Print, prepare your score to get the best results.

CHAPTER ELEVEN

Fill In The Title And Composer

The printout includes the Song title and composer. Enter these in the Title/Author requester accessed by the Title/Author... command found in the Song menu. Bars&Pipes Professional centers the title on the top and places the author's name in the upper right-hand corner of the first page it prints.

Label The Tracks

Each Track label is the instrument name. Use the Track Name requester found in the Tracks window by double-clicking on the Track Name to the left of each Track. Bars&Pipes Professional prints the name of each part in the top left-hand corner of the first printed page. In a Concert or Transposed Score, Bars&Pipes Professional prints the name of each part above the first measure of each line.

Organize The Tracks

Bars&Pipes Professional prints the individual parts of Concert and Transposed Scores in the order in which the Tracks appear in the Tracks window. To rearrange the ordering of your Tracks, and thus the print order of your score, use the Track Up and Track Down buttons found on the top of the Tracks window.



Select a Track, then click on the up arrow to move it up one in the list or on the down arrow to move it down. Double-click to send a Track to the top or bottom of the Track list.

Size The Display

The sizing of the first Track's Graphic Editor display determines the number of measures per line printed. To change the Sizing of the Edit display, open the Edit window for the Track by double-clicking on the Track. Use the Zoom In and Zoom Out buttons, or the Sizing menu option, to choose the overall Sizing for the Edit display.

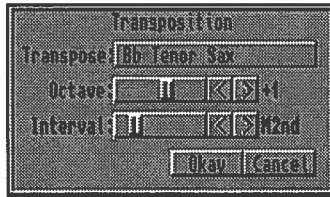
Select The Clefs

Each part may be printed on the Treble Clef, the Bass Clef, or both. For each Track, open the Graphic editor and select the desired Clefs from the Print Options... submenu of the Notation menu.

By default, Bars&Pipes Professional prints both Treble and Bass Clef. You may choose either or both.

Set The Transpositions

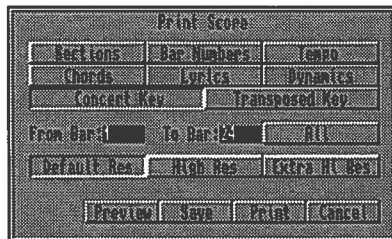
You may need to print certain instrument parts in the appropriate transpositions. For example, an Alto Sax part can be displayed in Eb to be easily read by an Alto Sax player. If you need to set the Transposition for a Track, open the Transposition requester from the Notation menu of the Graphic Editor.



Determine the Transpose type by clicking after the Transpose: prompt and selecting from the scrolling list. If you'd like to define your own transposition, select Custom and drag the Octave and Interval sliders. Please read Chapter 8, Note Editing, for a thorough explanation.

The Print Requester

Once you have finalized your printing specifications, open the Print requester by selecting the Print... command. When you select the Print requester from the Song menu, Bars&Pipes Professional prints the entire score; when you select it from the Groups menu, Bars&Pipes Professional prints only the selected Group's member Tracks; and when you select the Print requester from the Track menu or an individual Track's Graphic Editor window's Notation menu, Bars&Pipes Professional prints the contents of the Track.



Additional Information

The top six buttons in the Print requester select additional information to print. To turn each option on or off, click on its button.

CHAPTER ELEVEN

Sections

If you choose to print Sections, Bars&Pipes Professional prints the A-B-A section names above the music.

Bar Numbers

If you choose Bar Numbers, Bars&Pipes Professional prints the measure number over each line's beginning measure in your music.

Tempo

If you choose Tempo, Bars&Pipes Professional prints the tempo at the beginning of your music.

Chords

If you choose Chords, Bars&Pipes Professional prints chord changes, entered in the Song Parameters, above each Track, or part. In either a Concert or Transposed Score, Bars&Pipes Professional prints chords which were entered in the Master Parameters above the first Track.

Lyrics

If you choose Lyrics, Bars&Pipes Professional prints lyrics, entered in the Song Parameters, above each Track, or part. In either a Concert or Transposed Score, Bars&Pipes Professional prints lyrics which were entered in the Master Parameters above the first Track.

Dynamics

If you choose Dynamics, Bars&Pipes Professional prints dynamic markings, entered in the Song Parameters, within a Track, or part.

Transposed Or Concert Score

If you choose Transposed Score, Bars&Pipes Professional prints each Track transposed by the key established in the Transposition requester (see above.) Choosing this option turns off the Concert Score option.

If you choose Concert Score, Bars&Pipes Professional prints each Track without transposition. Choosing this option turns off the Transposed Score option.

Selecting Measures To Print

To specify which measures Bars&Pipes Professional prints, enter the starting and ending measure numbers after the From Bar: and To Bar: prompts.

If you want to print all measures, click on the All button, which sets the fields to cover the entire range of the piece.

Print Resolution

You may choose from three different print resolutions.

Default Res

Select Default Res for printing in the default resolution. You may determine the resolution from the graphics preferences in your WorkBench printer Preferences. Typically, you might set the WorkBench preferences to the minimum acceptable resolution, for fastest printout. Use this option to get quick trial printouts.

High Res

High Res automatically chooses the highest resolution available in your Workbench preferences. This option gives the best quality available under Workbench 1.3.

Extra Hi Res

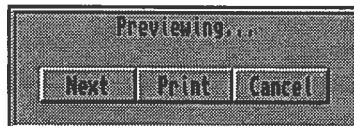
Workbench 2.0 users with at least 1 megabyte of chip memory can select Extra Hi Res for much sharper printing. This mode creates much cleaner lines but requires extra time to print.

Previewing

To view the final output without actually sending it to the printer, click on the Preview button found in the Print requester. This opens a small screen with the notation displayed.

NOTE → If you're previewing an Extra Hi Res printout, you can scroll to view the entire screen by clicking down with the mouse and dragging.

It also opens a small requester with three buttons: Next, Print and Cancel.



Next

To view the next line of notation, click on Next. Bars&Pipes Professional shows you each line of notation until it has displayed all of the selected measures.

Print

Click on the Print button to leave preview mode and start printing immediately.

CHAPTER ELEVEN

Cancel

Click on the Cancel button to access the Print Requester again. (If you want to exit the Print Requester, click on its Cancel button.)

Printing

Bars&Pipes Professional prints notation by sending an image of the music to the Preferences printer driver. Remember, in order to print properly, you must set Preferences from Workbench to accommodate your printer.

To begin printing, click on the Print button. Bars&Pipes Professional opens a display screen, paints the notation in it, and sends this out to the printer. Above, it opens a requester with a Cancel button. Printing can take a while, so be patient. Click on the Cancel button to abort printing.

Saving as an ILBM File

Click on the Save button in the Print Requester if you would like to save your music as an IFF/ILBM file. The file requester opens. enter a unique file name for each page of printout. The IFF/ILBM file(s) may then be loaded into a graphics program such as Deluxe Paint, and imported into word processors, etc.

Chapter 12

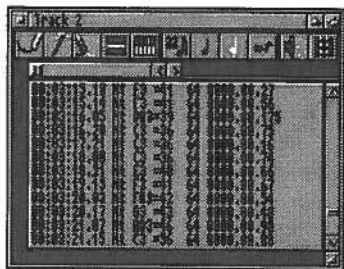
Overview

While Bars&Pipes Professional's Graphic Editor provides a powerful graphics-based environment for editing music, certain editing operations require finer detail. For low-level, numeric editing of MIDI events, Bars&Pipes Professional provides the List Editor.

Accessing the List Editor

To open the List Editor, you must first open the Graphic Editor for the Track you want to edit, then select List Editing from the Prefs menu. Open the Graphic Editor for a Track by either double-clicking on a Track in the Tracks window, using the Magic Wand in the Song Construction window, or double-clicking on a Track in the Media Madness window.

Once you select List Editing, Bars&Pipes Professional closes the Graphic Editor window, then opens the List Editor window for that Track. The List Editor displays a list of all MIDI events in the Track.



NOTE → Double-clicking on a Track in the Media Madness window automatically opens the List Editor, if the Graphic Editor for that Track has not been previously opened.

The List Display

The List Editor window contains most of the Command and Default Note Buttons of the Graphic Editor window. The List Editor, however, does not have the Magnifying Glass, Hand, Bounding Box, Duplicator, or Zoom buttons. Below the buttons is a slider, used for modifying events or data (more on this later). Finally, the bulk of the window consists of MIDI events of various types, one event per line. Use the scroll bar to the right of the events to move through the event list.

CHAPTER TWELVE

Use the Show menu to select which MIDI events to display.

NOTE → The List Editor does not display Song Parameters.

To display Note events, select any of the following options from the Show menu: Staff - Notation, Tablature, Staff - Hybrid, Piano Roll, or Velocity.

The List Editor displays an event as a start time, followed by the type of event (please see the event types below), followed by event data.

The start time displays in either SMPTE time (hours, minutes, seconds, frames) or music time (measures, beats, clocks.) Use the SMPTE/Music button to select which time format is used.



When the button displays a film strip, the List Editor draws events in SMPTE time. Otherwise, the button displays musical notes and the List Editor draws events in music time.

The MIDI Events Display

The second field denotes the type of MIDI event. A listing of the different MIDI events and an explanation of their data fields follows. The name in parenthesis is the abbreviation the List Editor uses to display the MIDI event type.

Note (Nt)

The Note MIDI event contains the pitch, both as a note/octave (from C0 to G10) and as a numeric MIDI value (from 0 to 127), the velocity of the note (from 0 to 127), and the duration of the note (in Song-time).

```
00:03:16.05 Nt D#3=39 64 0000 00.175
00:03:16.20 Nt C3 =36 64 0000 00.75
```

With the Hit List option selected in the Display menu, the Hit List name of the Note event displays instead of the Note duration. This is particularly useful when used in conjunction with the Media Madness feature (please see Chapter 28, Media Madness.)

```
00:03:16.05 Nt D#3=39 64 Dog Bark
00:03:16.20 Nt C3 =36 64 Door Slam
```

Pitch Bend (PB)

The Pitch Bend MIDI event contains the amount of shift, from -8192 (maximum shift down) to 8191 (maximum shift up). Remember, the value given to Pitch Bend determines the proportion of the shift to the maximum. For example, a value of -4096 shifts the current note downward by half the

maximum. The MIDI specification uses this scheme because different instruments have different Pitch Bend ranges; full range on one synth may be an octave while only a whole step on another.

Mono After-Touch (MT)

The Mono After-Touch MIDI event contains the overall keyboard pressure, from 0 to 127.

Poly After-Touch (PT)

The Poly After-Touch MIDI event contains the note value for the key being pressed (like Mono After-touch) and the pressure on that key (from 0 to 127). Poly After-Touch is featured only on the most expensive keyboards, since the hardware must sense pressure on each individual key.

Control Change (CC)

The Control Change MIDI event contains the Control Change type (0 to 127) and the Control Change data (0 to 127). Control Change governs continuous controllers such as volume pedals and breath controllers.

Program Change (PC)

The Program Change MIDI event contains the patch number (0 to 127). Program Change controls the sound used by your MIDI device to play subsequent notes.

System Exclusive (SX)

The System Exclusive MIDI event contains no visible data. When you edit a System Exclusive event, Bars&Pipes Professional opens the System Exclusive requester. Please see the System Exclusive chapter for more on this requester.

System Exclusive events are special commands unique to the instrument (or product line). Manufacturers use System Exclusive events, for example, to set pitch bend ranges, transpose keys, send new patch data to the instrument, and to execute many other functions.

NOTE → The user's manual for your MIDI instrument can tell you whether your instrument supports System Exclusive events, and what the commands do.

The Edit Flags

To the left of the event list are the Edit Flags. Use these to set the boundaries of a Clip section for editing with Clips, just like in the Graphic Editor. The "begin Clip" Flag is a triangle pointing upward; the "end Clip" Flag is a triangle pointing downward.

CHAPTER TWELVE

Use the Flags in conjunction with the options in the Edit menu. Please refer back to the Note Editing chapter for a complete description of these commands.

Except for being turned sideways, the Edit Flags in the List Editor work just as they do in the Graphic Editor. As you probably know, the Edit Flags align with boundaries assigned by the Align with... Preferences option.

- ★ TIP ★ When you try to place an Edit Flag right after an event in the List Editor, don't be surprised if the flag jumps behind a number of events because you have "Align with... Measures" selected. Change it to "Align with... Anywhere" to be able to place an Edit Flag after any event. Even then, if several events have exact the same time, the Flag jumps to just before all of the events, because the position of the Flag is actually the time it occurs, not its position in the list.

Remember: in the List Editor, one event may be at one time, and the next event in the list could be a beat later, a measure later, or several measures later. Because of this, be careful when cutting and pasting.

Command Buttons

The first five buttons from the left are the Command Buttons. As you click each one with the mouse, the mouse's icon changes. All of these buttons have keyboard equivalents as well. Set the Command Buttons to determine how you use the mouse. The following list describes each button briefly. Later in this chapter, we'll delve into greater detail.

The Pencil:

The Pencil, or function key "F1," enters MIDI events. Clicking with the Pencil on a specific event creates a duplicate of the event, substituting the chosen default note parameters.

The Magic Wand

The Magic Wand, or function key "F2," alters the MIDI event's type and data.

The Eraser

The Eraser, or function key "F5," deletes events.

The ToolPad

The ToolPad contains selected Tools and processes notes with the currently-displayed Tool. The mouse pointer turns into a Wrench when the ToolPad is selected.

The Step Entry

The Step Entry button enables step entry of events from a MIDI keyboard.

Default Note Buttons

Before drawing or step-entering events, set the Default Note. The Default Note consists of a note value (eighth, quarter, etc.), a modifier (triplet, dotted, normal), an articulation (staccato, legato, etc.), and a dynamic level (pp through ff). Four separate buttons set these standards.



Upon pressing them with the mouse, each button reveals a pop-up menu with the options displayed. Drag the mouse to the desired option and lift up to select it. Bars&Pipes Professional displays your choice on the appropriate button.

Note Value

The first button determines the currently selected note division. Your choices range from a whole note to a sixty-fourth note. Select your choice from the menu by dragging the mouse to the desired choice. You can also press function key "F7" to decrease the note value without using the mouse, or press SHIFT and function key "F7" to increase the note value.

Note Modifier

The second button modifies your selected note value. The first item in this menu, a triplet, shrinks the size of the note to two-thirds its note value. The second menu item, a "normal" note, leaves the selected note value as is. The third item, the dotted note, adds half of the note to the selected note's length. In other words, Bars&Pipes Professional multiplies the note value by one and one-half. Select your choice by dragging the mouse to the desired choice. You can also press function key "F8" to decrease the note length without using the mouse, or press SHIFT and function key "F8" to increase the note length.

Articulation

The third button determines the relative length of the selected note. The menu range extends from staccato (short) to legato (slurred). Staccato, signified traditionally as a dot above a note, usually indicates a duration of 1/4 its full length value; Portato, signified traditionally by the absence of a marking above the note, indicates a note duration of 1/2 its full length value; Leggerio, traditionally signified as a horizontal line above a note, indicates a note duration of 3/4 its full note value; and Legato, traditionally signified with an arched line above a series of notes, indicates a note duration equal to its full value, with no perceptible space between each note. Make your selection by dragging the mouse to the desired choice and lifting up. You can also press function key "F9" to make the articulation longer in

CHAPTER TWELVE

duration without using the mouse, or press SHIFT and function key "F9" to make the duration shorter.

Velocity

The final button, the farthest to the right, determines the velocity of the note. You have six choices ranging from very soft (pp) to very loud (ff). Make your selection by dragging the mouse to the desired choice and lifting up. You can also press function key "F10" to increase the note volume without using the mouse, or press SHIFT and function key "F10" to decrease its volume.

Editing Events

Use the Command buttons described earlier to edit events in the List Editor.

Entering Events

To enter new MIDI events, activate the Pencil by clicking on the Pencil button or by pressing function key "F1." Then, click the Pencil on the MIDI event located just after the point where you want to insert the new event. If you want to enter a new event at the very bottom of the list, click in the blank area below the last event.

The type of event you enter is the same as the one you clicked on. If you clicked on a note, the note also has the same pitch of the note you clicked on, and the volume, duration, and articulation set by the Default Note. Other MIDI events use data from the events you clicked on.

Altering MIDI Events

With the List Editor, you can edit MIDI Events directly by changing the data associated with the Events, or even by changing the Events themselves. To edit Events, activate the Magic Wand by clicking on the Magic Wand button or pressing function key "F2."

When editing Events, the slider above the event list becomes active. To edit an Event, click on any part of the event. Bars&Pipes Professional highlights the selected data in red. Now, you can drag the slider to the desired value (or use the arrow buttons to the right of the slider).



You can also directly edit the text to the right of the slider.

NOTE → If the Hlt List option is enabled in the Display menu, the textual translation of note value to Hlt List name displays here. Use this field to enter new Hlt List

translations. Remember, each note can have only one Hit List equivalent. If you set C4 to be "dog bark," all C4 notes display as "dog bark."

Erasing Events

To erase events, select the Eraser by clicking the Erase button or by pressing function key "F5," then click on each event you want to erase. If you make a mistake, you can select Undo (Right Amiga - U) from the Edit menu to restore the last event you erased.

Toolizing Events

The List Editor window contains the same ToolPad as the Graphic Editor and Song window. You can place, select, and edit Tools from the List Editor in the same manner as for other windows in Bars&Pipes Professional. Toolizing events in the List Editor can be both powerful and confusing. Powerful, since you can edit the results exactly to your liking. Confusing, since Tools can remove an event, reposition it in time, or add additional ones. For example, if you use the Echo Tool on a note, the echoes get mixed in with other notes and events down the line.

- ★ TIP ★ Another powerful way to use the ToolPad in the List Editor is to explore how Tools affect specific MIDI events. When you Toolize an event in the List Editor, you see the results accurately in numerical form. You can use this knowledge to edit Tool parameters to your liking, with less guesswork and better results.

Step Entering Events

To enter MIDI events into the List Editor from any MIDI instrument, click on the Step Entry button. Then, set the "begin editing" flag (the flag with the arrow pointing upward) to the point where you want to enter new events.

Like the Graphic Editor, any notes you step-enter from your MIDI keyboard automatically conform to the length, articulation, and velocity set by the Default Note parameters. To move forward one note length without entering an event, press the Space bar. To delete the previous event, press the Backspace key.

Please see Chapter 8, Note Editing for a thorough explanation of Step Entering.

CHAPTER TWELVE

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Chapter 13

Overview

Use the System Exclusive requester to enter and edit System Exclusive MIDI messages. Normally, you'll access it from the Graphic and List Editors, but you'll also use it from the Big Sys Accessory.

Unlike other MIDI events, System Exclusive MIDI events are system specific – one MIDI device's System Exclusive implementation may not be the same as another's. Examples of System Exclusive data are patch banks, system memory dumps, system specific filters, etc.

NOTE → Certainly the most frequent use of System Exclusive packets is in patch organization. The PatchMeister, which integrates directly into Bars&Pipes Professional, covers this aspect extremely well. As a result, you don't need to become versed in the underlying technology of System Exclusive protocols to effectively use them to your advantage.

Recording System Exclusive Events

Bars&Pipes Professional can record System Exclusive events just like other events. By default, the MIDI In and MIDI Out Tools are set up to filter out System Exclusive data. You may decide to record a System Exclusive dump from your keyboard, for instance.

To do so:

1. Highlight the System Exclusive button in the MIDI In and MIDI Out Tools of the target Track.
2. Make sure that the Track is in Record mode, and put the Sequencer in Record mode as well.
3. Start the Sequencer.
4. Command your MIDI unit to dump System Exclusive. Make certain that there is no handshaking needed.
5. Stop the Sequencer when your MIDI device is finished.

Do the opposite when you want to send the System Exclusive data back to your MIDI device: set your device to receive, and start the Sequencer.

NOTE → This process does no handshaking. Handshaking protocols require communication in both directions. The PatchMeister universal patch librarian takes full advantage of the handshaking ability of many brands of MIDI devices.

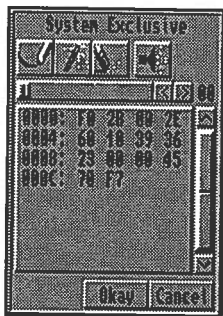
CHAPTER THIRTEEN

Accessing the System Exclusive Requester

Access the System Exclusive requester by clicking with the Pencil or Magic Wand in the System Exclusive region of the Graphic Editor. Please see Chapter 9, MIDI Event Editing, for more information

Creating A System Exclusive Event

To create a System Exclusive event, select the Pencil, then click in the System Exclusive region of the Graphic Editor. Bars&Pipes Professional opens the System Exclusive requester.



Editing A System Exclusive Event

To edit an existing System Exclusive event, select the Magic Wand, then click on a System Exclusive event. Bars&Pipes Professional again opens the System Exclusive requester.

Big Sys

The Big Sys Accessory also accesses the System Exclusive Requester. Please see the Big Sys Accessory in the Accessories chapter.

Editing System Exclusive Data

Use the three Command buttons to edit System Exclusive data in the System Exclusive requester.

Entering System Exclusive Data

To enter data into the System Exclusive requester, select the Pencil by clicking on it or pressing function key "F1."

Click on any byte in the display to introduce a new byte. The requester creates a new data byte with the same value as the byte you clicked on. If

you click to the right of the last byte, Bars&Pipes Professional creates a new byte just before the ending F7 byte.

NOTE → The System Exclusive Requester displays all byte in Hexadecimal notation. Hexadecimal represents numbers in base 16, instead of base 10. The digits are 0 through 9 followed by A through F (for 10 through 15.) As odd as it may sound, this is much more natural for binary data, because two hexadecimal characters always make up a byte (0 through 255 becomes 0 through FF.)

Altering System Exclusive Data

To change the value of a data byte in the display window, select the Magic Wand by clicking on it or pressing the "F2" function key.

Click on the byte you want to change. The requester displays the byte in the slider above the display window. You may now drag the slider to change to the desired value.

Deleting System Exclusive Data

To delete a data byte, select the Eraser by clicking on it or pressing the "F5" function key.

Click on the byte you'd like to erase.

Sending The System Exclusive Command

Click on the Speaker button to the System Exclusive event down the Track's PipeLine and out the MIDI cable. Since the system ID and channel number are embedded in the event data, only the intended instrument receives the event.

Bars&Pipes Professional does not support messages that require a dialog with the synthesizer. And, since the channel number is embedded in the event data, if you want to send this command to more than one instrument, you must edit the channel number and send the command again.

If you are satisfied with your entry, click Okay to accept the changes, or click Cancel to abort the changes.

About System Exclusive Data

Please keep in mind the following points about System Exclusive Data:

Real-Time Recording And Playback

During real-time recording and playback, Bars&Pipes Professional does not support System Exclusive messages that require responses or handshaking, from the synthesizer. Usually, such messages involve downloading large sound patches to the synthesizer. You should do this in advance rather than

CHAPTER THIRTEEN

during the Song's performance. The amount of data involved usually clogs the MIDI network, which results in the pausing of all music until the computer finishes sending the patch.

Instead, set up your System Exclusive information first by using Big Sys or, for patch organization, The PatchMeister. You can also keep System Exclusive packets recorded in one Track. After loading the Song, solo the Track and have it send its stuff. Then, mute the Track and activate all others.

Format Constraints

The first and last bytes of the System Exclusive data always have the hexadecimal values of F0 and F7. You cannot change or delete these bytes, as they signal the beginning and ending of the event.

The next byte specifies the manufacturer's ID and channel number of the instrument. This manufacturer's ID (obviously) varies from machine to machine, and is used by the instrument to verify that the event makes sense to that instrument.

The third byte and onward (to the next to last byte) specify the System Exclusive command plus any data needed by that command.

From this, we can see that all System Exclusive events must be at least three bytes long, including the start and stop bytes. The System Exclusive requester, however, does not force a minimum message length beyond the start and stop bytes.

Chapter 14

Overview

Bars&Pipes Professional's open-ended design affords several advantages: flexibility, expandability, affordability and more. Accessories provide this expansion link by enhancing Bars&Pipes Professional's built-in features. And, as you grow as a composer, Bars&Pipes Professional grows with you.

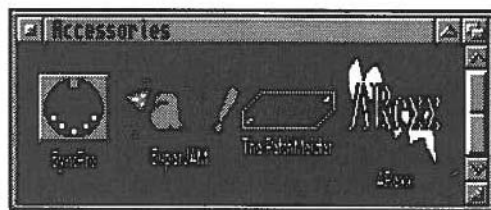
Accessories are not part of the main Bars&Pipes Professional program. Instead, Bars&Pipes Professional loads them in as separate modules. You can expand the capability of Bars&Pipes Professional by adding more Accessories without upgrading Bars&Pipes Professional itself.

For instance, SuperJAM!, Blue Ribbon's interactive composition software, comes in an Accessory version that integrates directly with Bars&Pipes Professional, embedding your SuperJAM! compositions into your Bars&Pipes Professional compositions, and giving you the combined editing and creating power of both programs simultaneously!

The PatchMeister universal patch librarian also comes in an Accessory version that links into your Bars&Pipes Professional composition. The System Exclusive files controlled and manipulated by The PatchMeister are attached to your Songfiles, automatically setting up your MIDI devices whenever you load in a new Song!

The Accessories Window

Accessories reside in the Accessories window. To open the Accessories window, select it from the Windows menu in the Main Screen or double-click on its icon.



The Accessories window displays all currently loaded Accessories as icons with their names beneath them. Use the scroll bar and arrows to view those Accessories which you cannot see. Bars&Pipes Professional does not automatically load all Accessories.

CHAPTER FOURTEEN

Installing Accessories

In order to use an Accessory, you must first install it. To load an Accessory, select Install... from the Accessories menu. The File Requester, which lists all of your Accessories, opens. Select an Accessory and load it into Bars&Pipes Professional. Once you load an Accessory, it becomes an integral part of your system and is automatically reloaded every time you run Bars&Pipes Professional.

★ TIP ★ Loading an Accessory updates the text file "Accessories." This file keeps Track of which Accessories Bars&Pipes Professional loads upon startup.

To use an Accessory, double-click on its icon.

NOTE → Some Accessories are always active when loaded. Please refer to the particular Accessory description for more information.

Removing Accessories

To remove an Accessory from the Accessory window, click on it once, then select the Remove command from the Accessories menu. Bars&Pipes Professional removes the Accessory from the system and no longer reloads it. It does not, however, delete it from disk.

Bars&Pipes Professional comes with several Accessories that expand its functionality:

ARexx



The ARexx Accessory receives ARexx commands, which in turn instruct Bars&Pipes Professional to load, play, start, stop, and synchronize music under the control of other Amiga applications.

Installation

To install the ARexx Accessory, use the Install command found in the Accessories menu. From then on, it is active every time you run Bars&Pipes. The ARexx Accessory has no Control window.

In order for the ARexx Accessory to work, you must have ARexx (by William Hawes) installed in your computer, including the ARexx libraries. Fortunately, these are distributed with WorkBench 2.0. Also, the Rexxmast program must be running.

NOTE → Many people place the Rexxmast command in their startup sequence or WBStartup drawer to make it a permanent part of their Amiga environment; we suggest you do this as well.

ARexx Command Format

The ARexx Accessory receives commands addressed to "Bars&Pipes ARexx". Each ARexx command is followed by an optional set of parameters. Many commands receive time information in SMPTE, Beats & Measures, or MIDI Clocks. So, the first parameter often is "BEAT," "SMPTE," or "CLOCK," indicating which type of timing information follows. The second parameter is the actual time in the specified format. For example, to locate to a particular point in the Song, three different commands can be issued:

LOCATE BEAT measure.beat

i.e., ADDRESS "Bars&Pipes ARexx" LOCATE BEAT 1.4

LOCATE SMPTE hour.minute.second.frame

i.e., ADDRESS "Bars&Pipes ARexx" LOCATE SMPTE 0.0.23.12

LOCATE CLOCK midiclock

i.e., ADDRESS "Bars&Pipes ARexx" LOCATE CLOCK 300

The BEAT time parameter is in measures and beats. The SMPTE time parameter is in hours, minutes, seconds and frames. The CLOCK time parameter is in MIDI clocks. There are 24 MIDI clocks per quarter note, although Bars&Pipes thinks in terms of 192 clocks per quarter note. By using the MIDI standard, we stay consistent with other applications.

ARexx Commands

Here is a description of each command:

OPEN SONG *filename*

Loads a Song, replacing the currently loaded Song.

i.e., ADDRESS "Bars&Pipes ARexx" OPEN SONG "Time.Song"

SAVE SONG *filename*

Saves the currently loaded Song to the selected file.

PRELOAD *filename*

Preloads a performance for later installation.

i.e., ADDRESS "Bars&Pipes ARexx" PRELOAD "rock.Song"

INSTALL *filename*

Replaces the current Song with a preloaded one.

i.e., ADDRESS "Bars&Pipes ARexx" INSTALL "rock.Song"

LOCATE BEAT/SMPTE/CLOCK *time*

Locates a specific position in the Song.

CHAPTER FOURTEEN

LOCATE BEAT/SMPTE/CLOCK

Reads the current position. Uses the same command as above with no time parameter.

START

Starts playback at the current position in the Song.

START BEAT/SMPTE/CLOCK *time*

Starts playback at a specific point.

STOP

Stops playback immediately.

RECORD

Starts playing and recording at the current position.

RECORD BEAT/SMPTE/CLOCK *time*

Starts recording at a specific point.

PUNCHIN

Enters record mode (whether or not playing).

PUNCHOUT

Exits record mode (but keep on playing).

TOFRONT SCREEN

Brings the Bars&Pipes Professional screen to the front.

TOBACK SCREEN

Puts the Bars&Pipes Professional screen to the back.

WAIT BEAT/SMPTE/CLOCK *time*

Waits until the Song reaches a specific point, forcing the ARexx caller to synchronize with Bars&Pipes Professional.

FRAME 24/25/29/30

Sets the SMPTE frame type. A SMPTE frame type of 29 indicates drop frame.

FRAME

Reads the SMPTE frame type.

TEMPO

Reads the current tempo.

★ TIP ★ A sample ARexx script that uses these commands is included in the Examples drawer of the Bars&Pipes Professional disk.

NOTE → Warning: If you are using Bars&Pipes Professional in conjunction with Deluxe Video III, you must run Bars&Pipes Professional first, then Deluxe Video. Otherwise, you may experience a loss of timing. For playing MIDI files under ARexx control, we recommend the Media Madness Player.

Big Sys - A Generic Patch Librarian

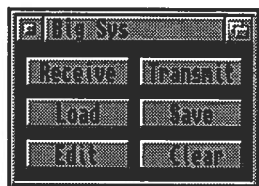


Big Sys receives and transmits MIDI System Exclusive events.

Useful for saving and sending patch banks to your synthesizer, it transmits the data when you first load a Song, rather than every time the sequence plays. Big Sys provides options for receiving, transmitting, editing, loading and saving System Exclusive packets that do not require handshaking and are up to 65,535 bytes in length.

NOTE → For receiving and transmitting System Exclusive events with full handshaking, consider The PatchMaster universal patch librarian.

To open the Big Sys Control window, double-click on the Big Sys icon.



Receiving And Transmitting SysEx Packets

To capture a System Exclusive packet, click on the Receive button. Big Sys waits until a System Exclusive packet arrives in the standard MIDI In port. Go to your synthesizer and execute the System Exclusive transmit command. (Please see your synthesizer manual for the appropriate instructions.) Big Sys waits patiently until the System Exclusive packet arrives.

To send the System Exclusive packet out the standard MIDI Out connector, click on the Transmit button.

CHAPTER FOURTEEN

Loading And Saving SysEx Packets

To read a previously saved System Exclusive packet from disk, click on the Load button. When you load a Song from Bars&Pipes Professional's Song menu, Big Sys automatically loads and transmits the System Exclusive packet previously saved as part of the Song.

To open Bars&Pipes Professional's file requester and save the System Exclusive packet to disk, click on the Save button. When you save the current Song with the Save command in Bars&Pipes Professional's Song menu, Big Sys saves the System Exclusive packet as part of the Song.

NOTE → Saving the System Exclusive packet as part of the Song can increase the size of the Songfiles dramatically.

Editing SysEx Packets

Once you have received or loaded a System Exclusive packet, you can edit it. To open the standard Bars&Pipes Professional System Exclusive requester, click on the Edit button.

To erase the current System Exclusive packet, click on the Clear button. Erasing in this manner frees memory.

NOTE → If you don't want a System Exclusive packet saved as part of your Song, you must erase it with the Clear command.

Follow The Leader - A Basic Lead Sheet Printer



Follow The Leader takes advantage of the higher level information you can place in your Bars&Pipes Professional compositions, in particular, Lyrics, Chords and A-B-A Sections, and prints a lead sheet with Lyrics and Chords.

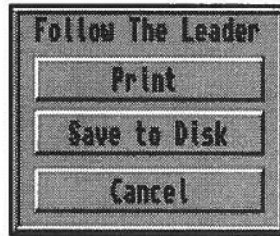
Your composition must follow a few rules in order to be printed intelligibly by Follow The Leader:

- It must have lyrics.
- Lyrics and chords must be placed in the Master Parameters window, not in those Parameters of an individual Track.
- Your lyrics must be punctuated properly: to signify the end of a line, use periods, exclamation marks and question marks.

For every line in your Song, Follow The Leader prints two lines. The top line displays the chords. Follow the Leader indicates every beat with either a chord or hash mark. The bottom line displays the lyrics, in time with the chords.

If you've placed A-B-A sections in your Song, Follow The Leader prints each section prefaced by its name. It then breaks the Song into its component verses, choruses, etc.

Double-click on the Follow The Leader icon. Doing so opens the Follow The Leader requester, which displays three choices: Print, Save to Disk, and Cancel.



Printing

Before printing, make sure you've set the Amiga's Preferences properly. Printing occurs purely in text mode. Unlike the Notation Print option, Follow The Leader does not print graphics.

To print the Lead Sheet, click on the Print button.

Printing To A Disk File

To save your lyrics and chords to a file so that you can load them into a word processor, click on the Save To Disk button. Doing so opens the Bars&Pipes Professional File Requester. Select or enter a file name, then click on Save to save your Song to that file.

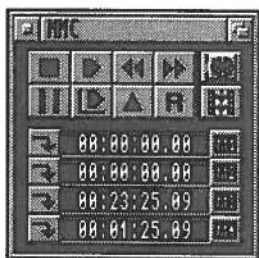
MMC - MIDI Machine Control



The MIDI Machine Control Accessory (MMC) provides a Transport style Control window to control tape decks and other equipment that support the MIDI Machine Control standard.

Open the MMC window by double-clicking on the MIDI Machine Control icon in the Accessories window.

CHAPTER FOURTEEN



From this window, you can transmit commands to your MIDI Machine Control compatible equipment, telling it to start, stop, rewind, fast forward, and more.

Setting Up MIDI

Since the MMC transmits its commands via MIDI, you must first set up the MIDI Out Tool. Notice the button on the right with a MIDI Out icon on it. This button identifies which MIDI Out Tool to use. If you only have the standard MIDI Out Tool installed in Bars&Pipes Professional, then no changes are necessary. However, if you have additional MIDI Out connectors, for example in Triple Play Plus or the One-Stop Music Shop, drag the appropriate Tool from the ToolBox and place it here to tell MIDI Machine Control to send commands via the interface of your choice.

MIDI Machine Code Transport Commands

The top four buttons from left to right are: Stop, Play, Rewind, and Fast Forward. Beneath these buttons are: Pause, Deferred Play, Eject, and Record. Click on these to send the respective MIDI Machine Control commands.

MIDI Machine Code Locate Registers

The bottom half of the MMC Control window contains four seek locations. Use these to record specific times and set your MIDI Machine code device to autolocate to those times. The text fields in the middle show the seek times for each. Here you can enter a value.

Click on the button to the far left of each location to send a Seek command with the specified time to your MIDI Machine. You can then immediately send the Deferred Play command (please see above) to cause your MIDI Machine to begin playing as soon as it is done seeking. The Deferred Play may be necessary because some MIDI Machine Devices may take a while to seek (especially video and audio tape players.)

You can set the location time by hand by clicking on it, and typing in the value. Alternatively, you can click on the marker buttons to the right to

automatically set the location to the value in the corresponding Auto-Locate Flag in the Tracks window.

You can also choose whether to view the time in SMPTE time or music time. Do so by clicking on the SMPTE/Music Time button just under the MIDI Out Tool. When the button displays a film strip, the location times may be entered and viewed in SMPTE (hours, minutes, seconds, and frames.) When the button displays musical notes, the location time may be entered and viewed in music time (measures, beats, and clocks).

Synchronizing With Bars&Pipes Professional

You can also set the MMC Accessory to transmit commands in synchronization with standard Bars&Pipes Professional transport commands. To do this, enable the Sync to B&PPro Transport option in the MMC window's menu. Now, when you click on Start, Stop, Record, Rewind, and Fast Forward in the Transport Controls, they get sent to MIDI Machine compatible devices as well.

NOTE → Because of seek time issues, most tape oriented devices have difficulty keeping up with Bars&Pipes Professional. In these cases, it's better to use the MMC Control window to start the MIDI Machine device and have the device in turn control Bars&Pipes' transport via SMPTE or MIDI Clocks synchronization.

MTC - MIDI Time Code Synchronization



The MTC Accessory synchronizes Bars&Pipes Professional with any SMPTE to MIDI Time Code converter by way of your MIDI interface's MIDI In connector.

If you are using the SyncPro synchronization box, please remove the MTC Accessory from the Accessories window to avoid conflict with the SyncPro Accessory.



From the MTC Control window, you can view the current SMPTE time and activate synchronization.

CHAPTER FOURTEEN

Recording A SMPTE Stripe

Before synchronizing to SMPTE (MIDI Time Code,) you must record a SMPTE stripe. Please refer to your SMPTE hardware manual for instructions.

Synchronizing To SMPTE

Make sure the SMPTE signal emanating from your tape or video device is correctly being converted to and transmitted as MIDI Time Code into the MIDI In connector on your MIDI interface. If you have more than one MIDI In connector, choose whichever you'd like.

IMPORTANT: Set the SMPTE Offset in the Timing menu to match the starting SMPTE time on your tape.

The MTC Accessory features the following command buttons and display:

Activate

When you select this button, you enable SMPTE synchronization.

Run Lock

If you enable Run Lock, MTC constantly keeps Bars&Pipes Professional locked to tape. If the tape speeds up, so does Bars&Pipes Professional.

NOTE → We recommend keeping this option on.

Start your tape recorder rolling. Once the incoming SMPTE time reaches the SMPTE offset, the MTC Accessory activates Bars&Pipes Professional. If the tape starts part way into the performance, Bars&Pipes starts at that point.

SMPTE Counter

The SMPTE time counter at the top of the Control window always displays the incoming SMPTE time, whether or not Bars&Pipes is running. This is very useful for finding your location on tape.

PIP - Picture in Picture



If you have a GVP Impact Vision IV-24 card, you can open a video window inside your Bars&Pipes Professional screen. This is invaluable for scoring to video because now you can view the video integrated with the music as you compose it.

The PIP Accessory opens GVP Picture in Picture utility within the Bars&Pipes Professional screen. Double-click on the PIP Accessory to open Picture in Picture. You must have the GVP Impact Vision IV-24 card and software installed correctly for the PIP Accessory to function properly. ARexx must also be installed on your system.

NOTE → In addition to viewing the video, you also need to synchronize Bars&Pipes Professional to the video as it rolls. We recommend recording a SMPTE stripe on one of the video's audio Tracks and synchronizing via MIDI Time Code. SyncPro, our MIDI Sync box, is well suited for this task.

sMerFF - a MIDI File Format Converter



MIDI File Format is a standard for saving and retrieving MIDI performances. It is supported by almost all Sequencers on the major computer platforms, including Amiga, Macintosh, Atari and IBM-compatibles. Use sMerFF as a bridge between your work on Bars&Pipes Professional and other software on other machines. For example, if you compose on an Amiga but plan to take your work into a studio that uses Macintoshes, save your performances in the MIDI File Format and then read them into the Sequencer at the studio.

NOTE → Different computers have different disk formats. Solve this by using a utility to write in a different format, or transfer the files via a modem cable. Most computers, including the Amiga, provide IBM floppy disk emulation.

Many multi-media programs also perform MIDI files. For example, Scala, which performs interactive presentations, plays MIDI Files; the One-Stop Music Shop MIDI File Player plays MIDI Files under ARexx control; and MIDI File Format playback is built into the Windows 3.1 system.

sMerFF translates your Bars&Pipes Professional compositions into the standard MIDI File Format, and reads MIDI Files back into the Bars&Pipes Professional.

MIDI File Format Support

There are three different MIDI File formats: #0, #1, and #2. sMerFF supports #0 and #1. In addition to all MIDI performance events, sMerFF translates Key Signature, Time Signature, Lyrics, Track Names, Tempo Map, System Exclusive events and even SMPTE time. MIDI File Format, however, does not include information unique to Bars&Pipes Professional, such as Tools, Dynamics, Rhythms, and A-B-A sections.

To access sMerFF's controls, double-click on the sMerFF icon. This opens the sMerFF Control window.



Saving A MIDI File

Before saving in the MIDI File Format, you must make a few preparations:

1. Remove all dependancies on Tools in the Output PipeLines. Since the MIDI File Format does not support Bars&Pipes Professional Tools, you must convert your Tracks to perform without Tools. Usually, this is a matter of dragging a Tool from the Output PipeLine into the ToolPad and Toolizing the entire Track.
2. Determine which MIDI File options you'd like sMerFF to use as it saves your file. Select from the following options located in the lower half of the sMerFF Control window:

Format 0 and Format 1

sMerFF's write options allow you to save a MIDI File in either MIDI Format #0 or #1. Click on the appropriate button. In general, you probably want to save in Format #1, since it supports an unlimited number of Tracks.

Tempo Map Only

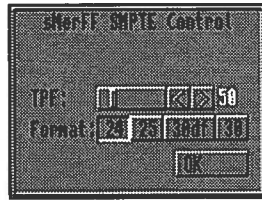
To save only the Tempo Map, click on the Tempo Map Only button.

SMPTE Format

Most MIDI File readers think in music time: Measures, Beats, and Clocks. These, combined with the Tempo Map, determine the timing of the complete performance. However, some MIDI File readers, especially in the multi-media field, prefer the music with SMPTE time stamps. If you are authoring for such an environment, you may very well find saving in SMPTE time more appropriate. Click on the SMPTE Format button to activate saving with SMPTE times.

SMPTE Options

If you are saving with the SMPTE Format button activated, open the SMPTE Options requester by clicking once on the SMPTE Options button:



SMPTE timing is usually done in terms of Hours, Minutes, Seconds, and Frames. However, for music, frame resolution is far too poor. So, an additional field, Ticks, is added by MIDI File readers and writers. This field increases the resolution by subdividing the frames. You can specify how many ticks per frame to use with the TPF: slider. Choose a number anywhere above 15 and the resolution should be sufficient. Choose the SMPTE format that is appropriate and click on its button. Usually, this latter choice is made with an understanding of the destination media, i.e. if it's intended for film set it to 24 frames per second.

Save MIDI File

Once you've prepared for saving, click on the Save MIDI File button. The file requester opens. Select or enter a file name. The extension, .MID, is automatically appended to the end of your filename. You can change this extension by typing an alternate one.

Loading A MIDI File

sMerFF provides two options for loading a MIDI file. You can either load it and have it replace the Song currently loaded, or load it and add its Tracks to the Song currently loaded.

Load MIDI File

To load a MIDI File Format Song into Bars&Pipes Professional, click on the Load MIDI File button. The file requester appears. By default, Bars&Pipes Professional lists only files with a .MID extension. You can change this extension by typing an alternate one. Once you've selected a file, sMerFF removes the current Song and loads the file in.

Add MIDI File

To load a MIDI File Format Song and append it to your current Song, click on the Add MIDI File button. This behaves identically to Load MIDI File, except it does not remove the Tracks already in memory.

- ★ TIP ★ The appended MIDI File Tracks start at the same time as the previously installed Tracks. If you'd like the new Tracks to start at the end of the Song, place them in a Group and shift the Group to the end (please see Chapter 19, Advanced Sequencing.)

CHAPTER FOURTEEN

SMoose



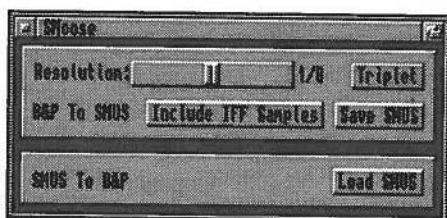
The Simple Music, or SMUS, format is an early standard for music files on the Amiga. Typically, older Amiga programs do not support MIDI File Format, but usually read and write SMUS files.

Unfortunately, the SMUS format often inaccurately represents performances, chopping up note durations and removing most MIDI events.

★ TIP ★ Avoid using SMUS wherever possible.

Use the SMoose Accessory both to save Bars&Pipes Professional Songs in the SMUS format and load SMUS files back into Bars&Pipes Professional.

Double-click on SMoose's icon to open the SMoose Control window.



Saving In SMUS Format

Before saving a Bars&Pipes Professional performance in the SMUS format, you must first preset several parameters.

Resolution

Drag the Resolution: slider to set the minimum resolution and minimum note size that SMoose uses to create the SMUS file. (The SMUS standard requires this.) A fine balance exists between setting the resolution small enough so that notes occur when they should and yet large enough so that notes don't break down into jumbles of tiny notes and rests. Click on the Triplet button to determine whether SMoose should measure the resolution in triplets.

Include IFF Samples

If you use the AmigoPhone (from the Internal Sounds Kit) on any of your Tracks, SMoose can save the actual sampled sounds as part of the file. Some SMUS readers know how to read the samples as well as the music, and can take advantage of this, automatically loading the instruments with the music. Activate the Include IFF Samples button if you want to save the samples.

Save SMUS

Finally, to save your composition in the SMUS format, click on the Save SMUS button. Select or enter a file name into the file requester and select Save.

NOTE → If you plan on using your SMUS file with *Amiga Vision*, set the Track names of each file to the filename of the IFF sound that you plan to use for that Track. When you tell *Amiga Vision* which directory to find the IFF samples, it looks for them by the Track name.

Loading A SMUS File

Click on the Load SMUS button. By default, the file requester only looks for files with the extension ".smus." However, you can change this extension by typing in a different one in the file requester. Once you've found your file, click on it and then select Load.

Smooose clears the currently loaded Song and installs the SMUS file.

SyncPro - Blue Ribbon's SMPTE Sync Box

The SyncPro Accessory integrates the SyncPro SMPTE to MIDI Time Code synchronization box with *Bars&Pipes Professional*. Using this configuration will assure you accurate and reliable synchronization when using MIDI Time Code and SMPTE.

★ TIP ★ You can also use the SyncPro hardware for MIDI Clock synchronization.

Double-click on the SyncPro icon in the Accessories window to open the SyncPro Control window.



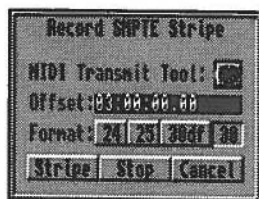
From the SyncPro Accessory's Control window, you can view the current SMPTE time, activate synchronization, and record a SMPTE stripe.

NOTE → If you are using the SyncPro Accessory, remove the MTC Accessory to avoid hardware conflicts.

CHAPTER FOURTEEN

Recording A SMPTE Stripe

Before you can synchronize to SMPTE, you must record a SMPTE stripe to tape. Click on the Stripe button. This opens the Stripe requester.



Use the Stripe requester to set up the stripe parameters. It communicates these to the SyncPro box via MIDI before it instructs SyncPro to start generating the SMPTE signal.

First, make sure you have a MIDI output from your Amiga connected to the MIDI input on the SyncPro box. It's also a good idea to have the SyncPro's MIDI Out connected to a MIDI input on your Amiga.

You'll find the following features in the SyncPro Accessory:

MIDI Transmit Tool:

Click on the MIDI Transmit Tool button to select the MIDI output Tool that is connected to SyncPro. If you only have the standard MIDI Out, no selection is necessary.

Offset:

Set the starting SMPTE time in hours, minutes, seconds, and frames by typing it after the Offset: prompt. The SyncPro box will start counting up SMPTE time from that point.

Format:

Select the appropriate SMPTE format from the displayed format buttons. If your work does not require any specific format, we recommend the 30 frame format.

Stripe

Click on the Stripe button to start sending SMPTE. The Stripe requester instructs the SyncPro box to start generating SMPTE at the selected offset and format. The Tape Out light on the SyncPro should turn on. If not, check your MIDI cables and make sure the MIDI Transmit Tool is correct. Then, set the record level in your tape recorder. If you've connected the MIDI Out of the SyncPro to the MIDI In on the Amiga, you should also see the SMPTE time display in the SyncPro Control window scroll.

Once everything is working properly and the levels are set, click on the Stop button to stop the signal. Then, start the recorder, and click on Stripe again to record the SMPTE signal to tape.

Stop

Click on the Stop button once you've recorded the entire stripe. After you've completed recording the SMPTE stripe, you no longer need to have the Amiga's MIDI Out connected to the SyncPro's MIDI In.

- ★ **TIP** ★ If you're using SMPTE sync for multitrack music recording, it often works well to stripe an entire tape with one SMPTE stripe. Then, you can lay down Song after Song, each at a unique SMPTE offset, without ever having to record a SMPTE stripe again.

Cancel

Leave the Stripe requester by clicking on the Cancel button.

Synchronizing To SMPTE

The SyncPro box reads SMPTE in its Tape In connector, converts it into MIDI Time Code, and sends that via its MIDI Out to the Amiga's MIDI In connector. If you have more than one MIDI In connector on your Amiga, you may use any one, because they all automatically send the MIDI Time Code to the SyncPro Accessory.

- NOTE** → Make sure you've set the SMPTE Offset (from the Timing menu of Bars&Pipes Professional) to the starting SMPTE time on the tape.

Activate

Enable SMPTE synchronization by clicking on the Activate button.

Run Lock

If you enable Run Lock, SyncPro constantly keeps Bars&Pipes Professional locked to tape. If the tape speeds up, so does Bars&Pipes Professional. We recommend keeping this option on.

Start your tape recorder rolling. Once the incoming SMPTE time reaches the SMPTE offset, the SyncPro Accessory activates Bars&Pipes Professional. If the tape starts mid way into the performance, Bars&Pipes starts immediately at that point.

SMPTE Counter

The SMPTE time counter at the top of the Control window always displays the incoming SMPTE time, whether or not Bars&Pipes is running. This is very useful for finding your location on tape.

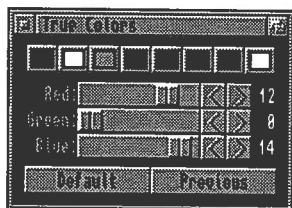
CHAPTER FOURTEEN

True Colors



With True Colors, you can change each of the eight colors in the Bars&Pipes Professional screen. Use it to design a unique color palette for each of your compositions.

To open True Colors, click on its icon in the Accessories window.



Setting The Palette

True Colors displays eight buttons across the top. These correspond to the eight colors in the screen. To edit a color, click on its button. True Colors displays the Red, Green, and Blue components of the selected color as three sliders. Drag the sliders to adjust the color.

Resetting The Palette

To reset the colors to their values prior to the opening of the True Colors window, click on the Previous Colors button. To reset the colors to the original Bars&Pipes Professional colors, click on the Default Colors button.

Saving The Palette

When you design new colors, True Colors installs them into your current Bars&Pipes Professional Song. When you save the Song, these colors stay with it. Every time you load the Song, the color palette changes to the saved values, *regardless of whether True Colors is open or even installed at the time.*

If you'd like to open Bars&Pipes Professional to a palette of your choosing, install it in the default Song:

1. Select New from the Song menu to open the default Song.
2. Open True Colors and design a palette of your choosing.
3. Select the Save As Default option in the Song menu.

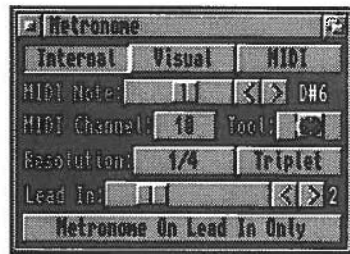
Chapter 15

Overview

Bars&Pipes Professional's Metronome provides a standard metronome click. Use this as a timing reference when recording your performances.

The Metronome creates a click by sounding the Amiga's internal circuitry, sending a MIDI event, or flashing the screen. It can click at rates varying from 1/64 note to a whole note. If you want, it can also provide a lead-in countdown before recording.

Access the Metronome window by double-clicking on the Metronome icon, or choosing the Metronome option in the Windows menu.



The Metronome Window

The following describes the functionality of the Metronome window:

Choosing The Metronome

There are three metronome sources:

Internal

Select the Internal button to send a tone to the Amiga's speakers for each metronome click.

Visual

select the Visual button to flash the Amiga's screen on every click. The first beat of any measure flashes red, followed by a series of other colors.

MIDI

Select the MIDI button to send a MIDI note through the MIDI cable.

Setting Up The MIDI Metronome

The MIDI metronome option requires a few additional parameters:

CHAPTER FIFTEEN

MIDI Note

Select the pitch of the MIDI note by sliding the MIDI Note: slider to the appropriate note value. By default, this is set to the General MIDI note for a metronome sound (if a drum kit is being played.)

MIDI Channel

Select the MIDI channel by clicking on the button after the Channel: prompt and selecting from the pop-up menu. By default, this is set to the General MIDI drum channel, channel 10.

MIDI Tool

Drop an Output Tool onto the button after the Tool: prompt. This determines which Tool transmits MIDI metronome clicks. Usually, this is the MIDI Out Tool.

NOTE → Triple Play Plus users can use the Triple Play MIDI Out 1, 2, or 3 Tools. One-Stop Music Shop users can use the One-Stop MIDI Out or SoundEngine Tools.

You can also use other Output Tools with varying results. For example, many of the Media Madness Tools can be used with interesting results!

Selecting The Beat Resolution

By default, the metronome sounds at each quarter note beat. you can change this rate by clicking on the button after the Resolution: prompt. Choose a rate from 1/64 to a whole (1/1) note.

If you select a 1/4 resolution in 4/4 time, the Metronome clicks on every beat. If you select 1/2 resolution, the Metronome clicks on every other beat, starting with the first beat in the measure. If you choose 1/8, the Metronome clicks twice per beat.

Depress the Triplet button if you want the Metronome to play in triplet time.

The Lead In Option

Often, it helps to have a countdown before you start recording. To set up a countdown, set the Lead In slider. The slider lets you set the number of measures to count down before recording actually starts.

To disable Lead In, set the number of measures for Lead In to zero.

You may find that you do not want to use the Metronome, except for the Lead In time. In this case, select the Metronome On Lead In Only button. You can also disable all three metronome options; this provides a silent Lead In.

Chapter 16

Overview

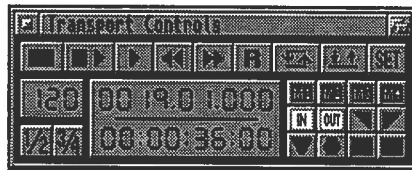
The Transport Controls govern the Sequencer's recording, playback, and Song positioning functions. These functions are accessible from the Transport Controls window, the Mini-Transport, and the Tracks window. They are also accessible from hot keys on the Amiga keyboard and, if defined, as MIDI remote controls. The Transport Controls contain familiar tape deck commands, such as Play, Record, Rewind, and Stop, to control recording and playback.

You can reposition the Transport Controls window or shrink it down to an icon. If you close the Transport Controls window, you can reopen it by double-clicking on the icon or by selecting Transport Controls from the Windows menu.

You can bring up the Mini-Transport by choosing its menu option in the Windows menu, or by typing the letter M on the Amiga's keyboard.

The Transport Controls Window

The Transport Controls window contains all of the Transport Controls. The Transport Controls in the Mini Transport and the Tracks window are subsets of the Transport Controls window.



The Transport Controls window contains four groups of controls: the Transport buttons, the Tempo controls, the Song Position controls, and the Flag controls.

Transport Controls

Across the top of the Transport Controls window are nine buttons, which control recording and playback. They are similar in function to the controls on a tape recorder.

CHAPTER SIXTEEN

Briefly, the Transport buttons are:

Stop (Enter Key on numeric keypad)



The Stop button halts recording and playback. It also sets the Position Marker to the current Stop time so the next Play command will pick up at the same point.

Click to activate the Stop button.

Start (Insert Key)



The Start button begins recording and playback from the beginning of the Song.

Play (Enter Key on numeric keypad)



The Play button begins recording and playback from the Position Marker. Use this control when you want to start from a specific point in the Song. Pressing the Play button a second time stops the performance.

Rewind



Rewind quickly shuttles the Song backward to access a specific point in the Song. If the Song is playing when you press the Rewind button, it stops, then resumes when you lift up on the new location.

Fast Forward



Fast Forward shuttles the Song forward in time. If the Song is playing when you press the Fast Forward button, it stops, then resumes when you lift up on the new location.

Record ('R' Key)



The Record button enables Sequencer recording. To activate, click on it. Doing so activates recording only in Tracks placed in Record mode. All others continue to play back.

Loop



The Loop button activates the Loop Mode recording function. With Loop Mode, you can record one section of your Track over and over. For more information on Loop Mode recording, please see the Loop Recording Mode section in the Basic Recording chapter.

Punch In/Out ('P' key)



Punch In/Out automatically switches the Sequencer in and out of Sequencer Record mode at preset locations. Although you can manually activate and deactivate the Record button while your Song plays, if you're also playing

THE TRANSPORT CONTROLS

an instrument, you'll need a third hand, which the Punch In and Out Flags provide.

Set



Use the Set button in conjunction with the Flag buttons, described below, to set Flag positions.

Tempo Controls

The Tempo Controls are on the left side of the Transport Controls window, beneath the Stop button. Use these to set the initial tempo.

NOTE → If you'd like to work with a Tempo Map and place tempo changes at specific times in your composition, you must enter them in the Tempo Map window.

Tempo

The Tempo button shows the tempo of the Song in beats per minute. Set the tempo, or speed, by clicking on the numbers and, while holding down the mouse button, dragging the mouse up to increase and down to decrease. You can change the tempo in single increments by single-clicking in the top or bottom half of the numbers.

1/2 and 3/4

If, temporarily, you need to slow down the Song (for example, when recording a difficult passage), click on the 1/2 or 3/4 buttons to slow the tempo to one-half or three-quarters of the original speed. Clicking on the same button a second time restores the tempo to its original speed.

★ **TIP** ★ These functions do not work in conjunction with a Tempo Map, except at the beginning of your Song, before there are any tempo changes in the Tempo Map. Disable the Synchronize to Tempo Map option in the Timing window to disable the Tempo Map. Enable this option to reinstate the Tempo Map.

Song Position Display

Just as a tape deck marks time with a counter that measures the tape's length, Bars&Pipes Professional keeps Track with the Song Position Display.



The top number in the Song Position Display keeps Track of the Song time in Measures, Beats, and Clocks. The bottom display shows Song time in the SMPTE format of Hours, Minutes, Seconds, and Frames.

CHAPTER SIXTEEN

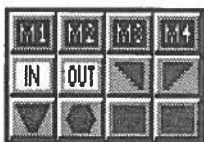
To reposition your Song to an exact time, click on the top or bottom half of the numbers in the desired display to increase or decrease their values. Note that the second display adjusts itself to the new position as well.

The Position Marker Flag



Bars&Pipes Professional also provides the Position Marker Flag, a red triangle with a blue border, which shows the location of the Song Position in the Sequencer. When you click the numbers in the Song Position Display as described above, the Position Marker moves to the new position as well. You can also adjust the Song position by using the mouse to drag this Flag to a new location.

Flag Position Controls



Use the Flag Position Control buttons to set and use the positions of each of the twelve Flags Bars&Pipes Professional supports.

To set a Flag to a particular point in your music, use the Set button directly above the Flag Position Controls. First, click on the Set button. With the Set button highlighted, adjust the Song Position Display by clicking on the Rewind or Fast Forward buttons or by clicking directly on the Song Position Display as described above. Then, click on the button corresponding to the Flag you want to move. This installs the Song Position into the Flag and disables the Set button.

★ TIP ★ You can also set Flags numerically in the Set Flags window.

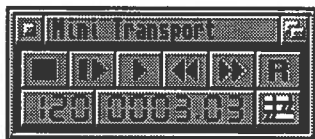
To instantly jump to a Flag position, click on the Flag's button without first selecting the Set button. This automatically sets the Song Position to the value in the Flag.

★ TIP ★ Pressing the 1, 2, 3 and 4 keys on the numeric keypad also jumps to the four Auto-Locate Flags.

To instantly jump to a Flag position and start playing immediately, double-click on a Flag.

The Mini-Transport Window

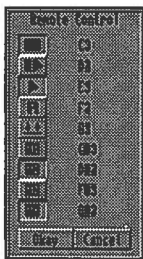
The Mini-Transport window provides the most important Transport Controls in a small, convenient window. Access it by choosing the Mini-Transport menu option in the Windows menu, or by typing the letter 'M' on the Amiga keyboard.



Most of the buttons are the same as in the Transport Controls window, with a few exceptions:

- You cannot change the Song Position by clicking on the Song Position display.
- There is an additional button, the SMPTE/Music Time button, that controls whether the Song Position display shows the current Song Position in measure time or SMPTE time. Click on this button to toggle between the two modes.

Remote Control



With the Remote Control option, you can use your MIDI keyboard to control the Sequencer. Remote controls let you Start, Stop, Record, Play, Punch In, Punch Out, and move to the Auto-Locate Flags (M1 through M4) in your composition.

To set up the Remote Controls, select Remote Control from the Preferences menu. In response, Bars&Pipes Professional opens the Remote Control requester.

Click on the Control you want to set up, then press the desired key on your MIDI keyboard. Use the keys located at the very top or bottom of your MIDI keyboard to prevent pressing one accidentally while recording.

Clicking on each control in the requester toggles it on and off. Only the highlighted controls are active. Each active control behaves identically to the button it represents in the Transport Control window.

When you're done, close the requester.

CHAPTER SIXTEEN

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Chapter 17

Overview

Bars&Pipes Professional contains sophisticated timing controls. It can run on its own or synchronize with external devices. It can synchronize to external MIDI Clock messages that vary the Tempo or synchronize to external SMPTE time and control the timing with the Tempo Map option.

Bars&Pipes Professional plays with a musical timing resolution of 192 PPQN (Parts Per Quarter Note). Its internal resolution is up to one millisecond at higher tempos.

Changing Tempo

Use the Tempo controls in the Tracks window, the Mini Transport window, or the Transport Controls window to change the initial Tempo. Also, you can use the Tempo Palette window to quickly change the Tempo.

Use the Tempo Map window to create changing Tempos over the course of your music. real-time Tracks allow you to create Tracks that ignore Tempo Maps.

Tempo

There are tempo buttons in the Transport Controls window, the Mini-Transport Window, and the Tracks window. They all represent the same Tempo.



Set the tempo, or speed, by clicking on the button and, while holding down the mouse button, dragging the mouse up to increase and down to decrease. You can change the tempo in single increments by single-clicking in the top or bottom half of the numbers.

The Tempo Palette Window

Quickly change the Tempo with the Tempo Palette window. To open the Tempo Palette, select Tempo Palette from the main menu's Windows menu, or double-click on the Tempo Palette icon.



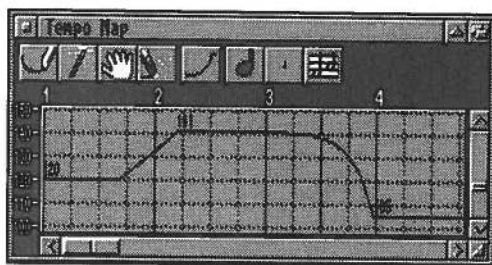
The Tempo Palette lists four preset Tempos: A, B, C, and D. To set the Tempo, click on the preset letter, e.g., A, and the Tempo assumes that value. To change a preset tempo, click on the number and enter the desired tempo.

CHAPTER SEVENTEEN

- ★ TIP ★ You may find it useful to place the Tempo Palette window directly above the Tempo controls (obscuring the Transport Control buttons), and use the "window to back" buttons on the windows to expose or hide the Tempo Palette as needed. This way, you can quickly change tempos while you're working.

The Tempo Map Window

If you are synchronizing with either the internal timer or SMPTE, you can use the Tempo Map window to create a series of tempo change commands to alter the pace of your music. Open the Tempo Map window by selecting Tempo Map from the Windows menu or clicking on the Tempo Map icon.



The Tempo Map window consists of seven control buttons and a graphic display of the Song's tempo over time. The graph shows constant tempo in blue, tempo changes in red, and the tempo at the end of each tempo change in blue. The top of the graph displays the measure numbers. Use this window to create and place multiple tempo changes throughout your composition.

Please refer to the next chapter, Chapter 18, Tempo Mapping, for more information on creating and editing Tempo Maps.

Disabling Tempo Changes

Sometimes, you might want to temporarily disable a tempo map.

To do so, turn off the Use Tempo Map selection in the Timing menu. Bars&Pipes Professional then uses the tempo you have set in the Transport Controls window to determine the Song tempo.

To return to your tempo map, deselect the Use Tempo Map option in the Timing menu.

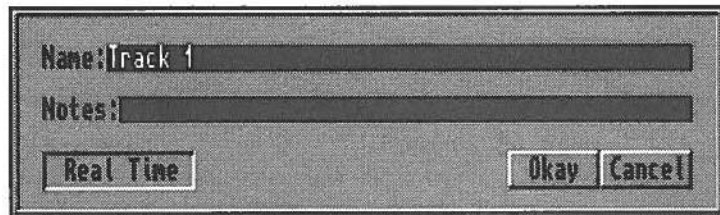
Real-Time Tracks

By default, Tracks operate in Song-time mode. In Song-time mode, increasing the Song's tempo causes notes to play faster. Each note plays on a

particular measure, beat and clock, not at an absolute hour, minute and second.

Real-time Tracks do not follow Tempo conventions. Instead, they contain events that occur at specific SMPTE times. This is useful when you are scoring for video or Media Madness and need to have certain notes or events occur at specific times.

To change a Track to a real-time Track, double-click on the Track's name in the Tracks window, or click on the Track name with the Magic Wand in the Song Construction or Media Madness windows. This opens the Track name requester.



Click on the real-time button to convert the Track into a real-time Track. Thereafter, each note plays at an absolute hour, minute, and second, independent of the selected tempo. Deselect the button to convert the Track back into a regular Track. Once a Track is in real-time mode, every time you change the Tempo, the Track stretches or shrinks to make sure the events all still occur at the correct SMPTE times.

Real-time Track names appear purple instead of blue when not highlighted, and red when highlighted.

MIDI Clock Synchronization

The simplest, most affordable method to synchronize Bars&Pipes Professional with external sources involves using MIDI Clocks (sometimes called Song Position Pointer).

MIDI Clocks work in the following manner: The MIDI standard includes a set of commands designed to synchronize multiple devices via the MIDI cable. These commands include instructions to start, stop and reposition playback, as well as Clock tick instructions that Bars&Pipes Professional uses to maintain accurate synchronization.

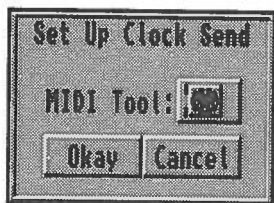
Designed with music in mind, MIDI Clock ticks correlate directly with Measures, Beats, and Clocks. As each Clock tick comes in via MIDI, Bars&Pipes Professional increments its position in Song time. In this

CHAPTER SEVENTEEN

manner, the MIDI Clocks control both the tempo and the position of the piece as it performs.

Sending MIDI Clocks

To synchronize an external MIDI device with Bars&Pipes Professional, first set the MIDI device to which you would like MIDI Clocks sent. For instance, if you have the Triple Play Plus MIDI interface, you can choose to have MIDI Clocks sent out of the Triple Play MIDI Out 1, 2, or 3. To select the MIDI device, choose Set MIDI Clock Tool... from the Timing menu. A requester opens.



Click on the Tool displayed after the MIDI Tool: prompt to cycle through the available Tools. Select the appropriate Tool and click on Okay.

NOTE → Only Tools that send out of a MIDI port are accessible from the Set MIDI Clock Tool requester. If there is no MIDI Out Tool loaded, you need to install a MIDI Out Tool to continue.

Then, select Send MIDI Clocks from the Timing menu. This command instructs Bars&Pipes Professional to send MIDI Clock events as well as Start, Stop, Continue, and Song Position events.

Recording A MIDI Clocks Synchronization Track

If you are synchronizing Bars&Pipes Professional to a device such as a drum machine that creates its own tempo map, you can skip over this section. However, if you plan to synchronize Bars&Pipes Professional to an audio or video recorder with MIDI Clocks, you'll need to lay down a MIDI Clocks sync Track on tape first.

To lay down a sync Track, do the following:

1. If you need a Tempo Map for your Song, create it. This will be used to record the timing.

NOTE → Instant tempo changes do not work well with MIDI Clocks. Always slope your tempo changes somewhat to improve precision while syncing to MIDI Clocks.

2. Activate Send MIDI Clocks in the Timing menu.
3. Prepare your tape deck and/or your MIDI Clock interface.

4. Start recording with your tape deck as you start the Bars&Pipes Professional Sequencer.

When you finish, you should have a MIDI Clock stripe on your tape. All the timing information, include the Tempo Map is embedded in the strip. You can now use the tape to slave Bars&Pipes Professional to your audio or video production.

Synchronizing To MIDI Clocks

To synchronize with an external MIDI device that transmits MIDI Clock events, select the option Synchronize to MIDI Clocks in the Timing menu.

The Synchronize to MIDI Clocks command disables Bars&Pipes Professional's internal timer and slaves it to MIDI Clocks coming in the MIDI interface attached to your Amiga. The incoming MIDI messages determine both the Tempo and Song Position.

- ★ TIP ★ To help the synchronization happen quickly and effortlessly, set the Tempo to a value reasonably close to Intended Incoming Tempo prior to starting.

If you have more than one MIDI input device, you don't have to set MIDI Clocks to enter the device of your choice. All MIDI Input Tools automatically route MIDI Clock messages to Bars&Pipes Professional's timing mechanism.

However, be careful not to have MIDI Clocks coming in at the same time on multiple MIDI inputs. For instance, you would not want to receive MIDI Clocks on the One-Stop Music Shop's MIDI In at the same time as on the standard serial MIDI interface's MIDI In.

Start from your MIDI Clock source, e.g. a drum machine or tape deck. Bars&Pipes Professional automatically jumps to the proper location and plays. You can even record while synchronized. Just put the Transport Controls into Record mode, then start from the MIDI Clock source.

When Bars&Pipes Professional synchronizes with MIDI Clocks, it disables the Lead-In feature (no countdown before starting).

- ★ TIP ★ Use MIDI Clock synchronization to dump a performance from another Sequencer into Bars&Pipes Professional. First, enable Bars&Pipes Professional's Multiple Ins Preference. This activates input on all Tracks on a channel by channel basis. Then, enable the Synchronize to MIDI Clocks option. Place all Tracks as well as the Transport Controls in Record Mode. Start the external Sequencer. Bars&Pipes Professional locks to the external Sequencer and records the entire performance on up to sixteen individual Tracks. Sometimes, for extra accuracy, it helps to record the transfer at a slow tempo.

CHAPTER SEVENTEEN

SMPTE (MIDI Time Code)

If you require synchronization to an external device in real-time instead of music time, a second option, SMPTE time code, comes in to play. SMPTE time code specifies the time in hours, minutes, seconds and frames, with no correlation to music time or tempo.

MIDI Time Code is a protocol for communicating SMPTE time via MIDI. MIDI Time Code events specify the time in hours, minutes, seconds and frames. By listening to MIDI Time Code, Bars&Pipes Professional can ascertain where in the sequenced piece it currently is. Use MIDI Time Code to synchronize with video hardware, as well as audio and video tape recorders.

To use Time Code with music, create a Tempo Map within Bars&Pipes Professional to specify the music tempo at different points in time. Then assign the desired SMPTE Offset in hours, minutes, seconds and frames. In this manner, Bars&Pipes Professional's Tempo Map and SMPTE Offset combine to translate real-time into music time.

Bars&Pipes Professional supports SMPTE in two ways: through menu options and Accessories. In the Main menu, the Timing menu options SMPTE Format... and SMPTE Offset... allow you to set these two aspects of SMPTE (more on these below.)

The MTC Accessory allows synchronization to most SMPTE boxes. The SyncPro Accessory interfaces directly with Blue Ribbon's SyncPro sync box. (Please see the Accessories chapter for more details)

SMPTE Sync Options

The following SMPTE synchronization options can be found in the Timing menu:

SMPTE Format...

When using MIDI Time Code, set the SMPTE format in the SMPTE Format... option. This option determines how many frames per second (FPS) Bars&Pipes Professional displays in SMPTE time.

NOTE → If you are synchronizing to an external SMPTE source, it automatically sets the SMPTE format. Under such circumstances there is no need to set the format.

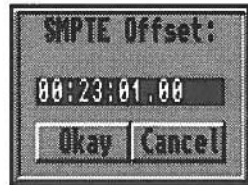
Four SMPTE frame rates are available:

- 24 FPS - This is the standard frame rate used with motion picture film.
- 25 FPS - This is the standard frame rate used with European television, video, and film.

- 30 FPS (Drop Frame) - This is the standard frame rate for American color video today. The frame rate for color video is actually 29.97 FPS. If you use Non-Drop Frame, at the end of one hour, there will be 108 frames less than expected. Drop Frame corrects this deficiency by systematically dropping 108 frames per hour, so that at the end of an hour, the total number of frames will still be 108 frames short, but the frame numbers will be correct. However, Drop Frame should only be used when necessary because of the inaccuracies caused by the dropped frame.
- 30 FPS (Non-Drop Frame) - This is the standard frame rate for black and white television.

SMPTE Offset...

If you synchronize your music to SMPTE, your music rarely begins at the time 0:0:0.0. Instead, the beginning is most likely between a few seconds to several hours later. If you are scoring a film or video, each composition certainly starts at a different point in SMPTE time.



To adjust the SMPTE Offset, open the SMPTE Offset requester by selecting SMPTE Offset... in the Timing menu. Enter the Song's starting time in SMPTE format; Hours, Minutes, Seconds, and Frames. Bars&Pipes Professional plays your music when the SMPTE source, perhaps a video recorder or multi-track recorder, reaches this point in SMPTE time. Click on Okay to accept your settings and Cancel, to abort them.

If you start the SMPTE source at a point after the SMPTE Offset, Bars&Pipes Professional automatically calculates the Song position based on the current SMPTE time, starting the Song somewhere in the middle.

Display SMPTE Offset

By default, Bars&Pipes Professional adds the SMPTE Offset to the Song time to display the SMPTE time; however, if you'd rather see the Song time without the SMPTE offset added, deselect Display SMPTE Offset in the Timing menu.

CHAPTER SEVENTEEN

Syncing To SMPTE

In order to synchronize Bars&Pipes Professional to SMPTE, you'll need a SMPTE to MIDI Time Code converter such as SyncPro.

NOTE → Because we've designed synchronization in as an Accessory, Bars&Pipes Professional easily supports third party SMPTE synchronization boxes. In addition, the Accessory mechanism provides for synchronization with other software. Programs like Real 3D and Imagine currently control Bars&Pipes Professional as if they were SMPTE sources. Please see the Accessories drawer on your Bars&Pipes Professional distribution disks for more on these and other options.

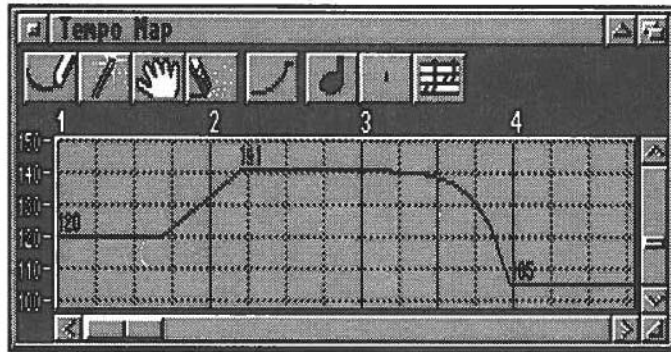
Either the SyncPro or MTC Accessory should be loaded in the Accessory window. Please refer to the Accessories chapter for more information.

★ TIP ★ Sometimes, Bars&Pipes Professional may not start exactly when the SMPTE time coming from your SMPTE interface reaches the SMPTE Offset. As a result, the very first MIDI events may not play. To avoid this, place a blank measure at the beginning of each Song. An easy way to do this is set the Edit Flags in the Tracks window to encompass the first measure and select Insert from the Edit menu.

Chapter 18

The Tempo Map Window

Use the Tempo Map window to create a series of tempo change commands to alter the pace of your music over time. Open the Tempo Map window by selecting Tempo Map from the Windows menu or click on the Tempo Map icon.



The Tempo Map window consists of eight control buttons and a graphic display of the Song tempo over time.

The Tempo Map Display

Most of the Tempo Map window features the Tempo Map graph. This graph displays the tempo on the vertical axis and the time in measures or SMPTE on the horizontal axis.

The graph shows constant tempo in blue, tempo changes in red, and the tempo at the end of each tempo change in blue.

Adjusting The Display



To display in SMPTE time, click on the SMPTE/Music Time button until it shows a film strip. The Tempo Map window redraws the tempo changes against a background of vertical lines at every one second interval.

NOTE → Once you've entered tempo changes, the spacing between the second markers stretch and shrink as the tempo slows and increases.



To display in music time, click until notes appear on the SMPTE/Music Time button. The Tempo Map window redraws the tempo changes against a background of vertical lines at every measure interval.

CHAPTER EIGHTEEN

Click on the two Zoom buttons to change the range of the display. The Zoom In button with the large note magnifies the view for a detailed look, while the Zoom Out button pulls back for a better overview of your the tempo map.

Editing the Tempo Map

Creating A New Tempo Map

Select New from the Tempo Map menu to erase the current Tempo Map and create a new one. The starting tempo for the new Tempo Map is the same as the old one.

★ TIP ★ The starting tempo is the same tempo entered in any of the Transport Controls.

Entering A Tempo Change



Before entering a tempo change, decide what kind of tempo change you'd like from by clicking on the Curve button. It provides four choices:

- Instant, a sudden tempo change
- Linear, a change that progresses at a constant rate;
- Exponential, a change that starts slowly, then accelerates.
- Logarithmic, a change that starts quickly, then eases into the final tempo.

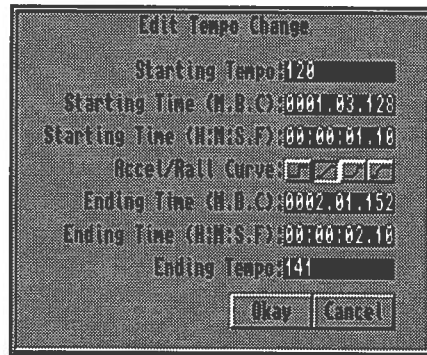
The Pencil, or function key "F1," inserts new tempo changes. Press and hold the mouse button down over the measure where you want the tempo change to begin. Drag up or down to set the new tempo and to the right to determine the length of the change. Instant tempo changes have no length.

As you drag the mouse, the Tempo Map window displays a straight "rubber band" connecting the beginning and ending points of the tempo change. The Title bar of the Tempo Map window shows the endpoint of the tempo change in Song-time and the ending tempo.

When you reach the desired endpoint, release the mouse button.

Altering A Tempo Change

To numerically alter a tempo change, select the Magic Wand or press function key "F2." Then, click on the tempo change you'd like to edit. This opens the Edit tempo change requester.



The Edit tempo change requester displays seven parameters that describe the tempo change. The parameters are:

Starting Tempo

Enter the Starting Tempo in beats per minute. Each tempo change starts at one tempo, then accelerates or decelerates to a second tempo, the Ending Tempo. The Starting Tempo of each tempo change is the Ending Tempo of the previous tempo change. As a result, you need only edit one of these Tempos, not both.

Starting Time (M.B.C)

Each tempo change begins at a specific point in the Song. To edit this position in Song-time (Measures, Beats, and Clocks), click on the Starting Time (M.B.C) line and edit it.

Starting Time (H:M:S:F)

The second Starting Time parameter displays the Starting Time in Hours, Minutes, Seconds, and Frames. You can edit this parameter, but take note: if you edit a tempo change which precedes this tempo change, the Starting Time for this tempo change changes, because the amount of time in hours, minutes, seconds and frames required to reach this point has changed.

Accel/Rall Curve

The Accelerando/Rallentando Curve let's you change the tempo change Curve type from the four options described above: Instant, Linear, Logarithmic and Exponential.

Select a curve by clicking on the appropriate button.

Ending Time (M.B.C)

Unless a tempo change has an Instant curve, you must specify the duration of the tempo change curve. Enter the time in Song-time after the Ending

CHAPTER EIGHTEEN

Time (M.B.C): prompt. B&P Pro calculates a tempo change which occurs gradually between the starting and ending times.

Ending Time (H:M:S:F)

The second Ending Time parameter displays the tempo change ending time in Hours, Minutes, Seconds, and Frames. Edit this field to set the tempo curve ending in SMPTE time.

Ending Tempo

Enter the final Tempo in the Ending Tempo: field. The Song continues at this Tempo until the next tempo change occurs.

When you have finished editing the tempo change, click on Okay, to accept the changes, or Cancel, to leave the previous settings intact.

Moving A Tempo Change

The Hand (function key "F3") drags either the start or the end of the tempo change. To drag the start point, click with the mouse just after the start of the tempo change and drag. To drag the end point, click just after the end point and drag. Move the mouse up or down to change the tempo, and across to change the duration

The Title bar of the Tempo Map window displays the end time and tempo of the tempo change as you drag it with the mouse.

Erasing A Tempo Change

The Eraser (function key "F5") deletes tempo changes. Click on any part of the red tempo change curve to delete it.

Deleting a tempo change also affects the next tempo change. For instance, the slope of the next tempo change is altered when the starting tempo changes.

Conforming A Section

Sometimes, you may need to create a tempo change that forces a section of music to fit exactly within a specific span of time. Do so with the Conform command in the Tempo Map menu.

When you select the Conform command, the Conform requester opens.

Conform Tempo

Starting Time (M.B.C.): 0001.01.00

Starting Time (H:M:S.F): 00:00:00.00

Ending Time (M.B.C.): 0030.01.00

Ending Time (H:M:S.F): 00:00:50.00

Resulting Tempo: 139

Fill in the following fields:

Starting Time

Enter the Starting Time of the portion you want to conform, in Song Time (M.B.C.) The requester automatically adjusts the starting SMPTE time.

Ending Time

Then, enter the Ending Time of the portion. This time you must enter both Music time in Measures, Beats, and Clocks, as well as SMPTE time, in Hours, Minutes, Seconds, and Frames.

Resulting Tempo

The requester then calculates the appropriate tempo change and places it in the Resulting Tempo field.

Conform

If you approve of the Resulting Tempo, click the Conform button to insert the tempo change into the Tempo Map.

Cancel

Otherwise, click Cancel to return to the Tempo Map or enter new Ending Time values to create a different Resulting Tempo.

★ TIP ★ The Conform option is very useful for scoring to video.

Undoing A Mistake

The Undo option (right-Amiga U) in the Tempo Map menu cancels the last change to the Tempo Map.

Aborting All Changes

The Abort command in the Tempo Map menu restores the Tempo Map to the condition it was in before you opened the Tempo Map window.

CHAPTER EIGHTEEN

Loading & Saving Tempo Maps

To load a Tempo Map from disk, select the Load command in the Tempo Map menu.

Select Save from the Tempo Map menu to save a Tempo Map to disk. Saving a Tempo Map makes it available for use with other Songs, or allows you to try out different Tempo Maps with the same Song.

Disabling Tempo Changes

If you need to disable tempo changes, open the Timing menu from the Tracks window and turn off the Synchronize to Tempo Map selection. Bars&Pipes Professional then uses the tempo you have set in the Transport Controls window to determine the Song tempo for the entire Song.

For more information, please refer to the previous chapter, Timing, Syncing, and Tempo.

Chapter 19

Overview

In Chapters 3 through 7, we learned the basics of multi-track recording and composition with Bars&Pipes Professional. Now it's time to jump back in and complete our exploration with some more advanced concepts.

Most of this chapter pertains to the Tracks window. The Tracks window is the central focus of multi-track sequencing in Bars&Pipes Professional. If it's not open now, open the Tracks window by double-clicking on its icon and close all other windows.

Groups

Sometimes its nice to be able to grab a collection of Tracks at once and perform an operation on them as a whole. For example, you might want to isolate all of your string Tracks and Toolize them together. Or, you might want to mute everything but the percussion Tracks so you can hear them out of context.

Use Bars&Pipes Professional's Groups mechanism to organize the Tracks that comprise your Song into Groups. A Group is a collection of Tracks that can be accessed as a unit. When a Track belongs to a Group, it's called a member Track. With Groups, you can Mute or Solo several Tracks on playback, which helps you isolate parts of your Song, or Toolize several Tracks at once, or execute many of the operations found in the Edit menu. You can create as many as eight Groups.

The Group buttons at the top of the Tracks window organize and control access to the Groups.



The numbered buttons, the Group Selectors, represent each of the eight Groups. Click on a Group Selector to activate its Group. Click again to deactivate. Use the Group button, to the right, when creating or changing the members of a Group.

Creating Groups

To create a Group, enter into Group Edit mode by clicking on the Group Button. Then click on one of the Group Selectors.

CHAPTER NINETEEN

Click on all of the Tracks that you want to belong to the Group. Notice that each Member Track is drawn highlighted. Click a second time on a Track to remove it from the Group. Click on the Group Button again to deactivate Group Edit mode.

From now on, whenever you activate the particular Group Selector, your defined Group is selected.

Editing A Group

You can reorganize a Group at any time.

To enter into Group Edit mode, depress the Group button and the Group Selector button for the Group you'd like to change. While the Group button remains active, you may toggle Tracks in and out of the Group by clicking on them. When you're done, click on the Group button to deactivate Group Edit mode.

★ TIP ★ You can place a Track in several Groups at once. This can be very useful.

Creating A Temporary Group

Often, it's useful to quickly create a temporary Group, especially when used in conjunction with the Group menu (discussed later in this chapter.) To create a temporary Group, hold down a shift key on the Amiga keyboard and click on several Tracks. Each Track that you click on becomes a member of the temporary Group.

Once you finish working with the temporary Group, deselect it by clicking once on any Track.

Group Mode

Clicking on one of the Group selector buttons places you in Group mode. In Group mode, the Track menu becomes the Group menu, and operates on every Track in the Group (see the Track and Group menus later in this chapter.)

Group Mode And The Graphic Editor

Groups allow you to view a Track of music in the Graphic Editor's Hybrid Staff and Piano Roll with other Tracks in the background. This useful feature allows you to compare the timing of notes on one Track with the timing of notes on another.

First, create or select a Group. Once in Group mode, open the Graphic Editor for a member Track of the Group. The notes of the other Tracks in the Group display as grey background notes. You cannot directly edit these notes.

When you open more than one Graphic Edit window simultaneously and both Tracks are members of the same Group, the notes in the foreground of one Edit window appear in the background of the second Edit window, and vice versa.

NOTE → Editing notes in one of these windows does not automatically update the background of the other window. The background notes of the other window updates only after the first window closes or updates the Track with the Update command. Then, the second window's background notes update upon the next window refresh of the second window.

Soloing and Muting



The Solo button is the leftmost button at the top of the Tracks window. The Solo button controls the Solo and Mute state of the currently selected Track or Group. Click on Solo once to solo the highlighted Track or Group. Click again to mute the Track or Group. Click one more time to return the Track or Group to its normal state.

Soloing A Track Or Group



Sometimes, you may want to hear only one Track or Group at a time. Click on the Solo button to isolate the selected Track or Group. This command mutes all remaining Tracks. Notice that their Mute/Thru/Play Only faucets switch to the Mute settings.

Muting A Track Or Group



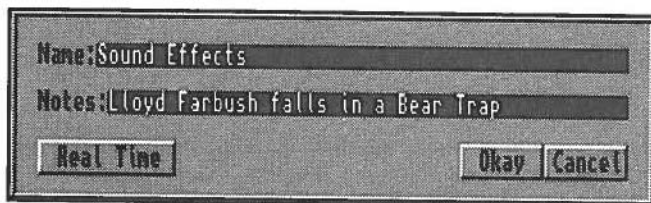
It can also be useful to mute the selected Track or Group. Click a second time on the Solo button and the selected Track or Group becomes mute, while all other Tracks turn on. The selected Track or Group's Mute/Thru/Play Only faucets switch to the Mute setting while the remaining Tracks' faucets return to their normal states.

Click on the Solo button a third time to return the Track or Group to Normal mode.

The Track Name Requester

Open the Track Name requester by double-clicking on its name in the far left of the Tracks window.

CHAPTER NINETEEN



- ★ TIP ★ You can also open the Track Name requester by selecting the Wand in the Song Construction or Media Madness windows and clicking on the Track name.

Use the Track Name requester to change the name, enter notes, and set the Real-Time property of each Track. The following features are found in the Track Name requester:

Name

Change the Track Name by editing the Name: field.

Notes

You may also enter a brief note about the Track in the Notes: field.

Real-time

The real-time button determines whether or not the Track is in real-time or Song-time mode. By default, Tracks operate in Song-time mode. In Song-time mode, increasing the Song's tempo causes notes to play faster. Each note plays on a particular measure, beat and clock, not at an absolute hour, minute and second.

In some cases, however, certain events must happen at times independent of the Song's tempo, such as sound effects in a film score. The sound effects must synchronize with their real-time screen counterparts. Such a situation calls for real-time mode. To lock a Track into real-time mode, click on the real-time button. Thereafter, each note plays at an absolute hour, minute, and second, independent of the selected tempo.

Since tempo changes cannot affect the timing of events in real-time Tracks, they change the position of the events in the Tracks instead. For example, if an event occurs at measure 2 in a real-time Track, doubling up the tempo should make that event play twice as soon. To avoid that, the event shifts further down to measure 3, to effectively play at the exact same time in seconds and frames.

Real-time Track names appear purple instead of blue in the Tracks window. They still highlight as a red color.

Okay & Cancel

Click on the Okay button to accept the changes, or click on Cancel to ignore them.

Rearranging Tracks

You can rearrange the list of Tracks any way you like. To do so, use the two arrow buttons that are to the right of the Group button.



The Track Up button, on top, moves the highlighted Track up one in the list. The Track Down button, on bottom, moves it down one.

Double-click on the Track Up or Track Down button to jump the selected Track to the top or bottom of the display, respectively.

The Track Menu

The Track menu, accessed from the Tracks, Song Construction, and Media Madness windows, contains operations that primarily apply to the currently selected Track in the Tracks display.

If a Group is currently selected, the Track menu becomes the Group menu. Many of the commands in the Track menu change to accommodate multiple Tracks instead of one. Notice that when an individual Track is highlighted, the menu items Load Group, Share Input, and Gather Group are disabled in the Track menu. These options exist purely for the Group menu.

Before using the Track menu, be sure to select the Track of your choice by clicking on it. The following commands are found in the Track menu:

New

The New command creates a new Track. If a Track is highlighted, the New command creates a new Track directly underneath the highlighted Track. Otherwise, it places the new Track at the bottom of all of the Tracks.

The new Track has, by default, standard MIDI In and MIDI Out Tools (if they are in the ToolBox.)

Alternatively, if you've prepared a default Track and saved it with the Save As Default command, New loads the default Track and installs it.

The new Track is automatically highlighted and its Input Arrow activated.

CHAPTER NINETEEN

Copy

The Copy command creates a duplicate of the selected Track and places it directly beneath the selected Track.

Merge...

The Merge command mixes the contents of two Tracks together, placing the results in the second Track.

To use the Merge command, select the first Track, then pick the Merge command.

Notice that the Title bar of the Tracks window displays the command, Select the Merge Track:. Click on the second Track to merge the Tracks, or click on the background of the screen to abort the Merge operation.

Bars&Pipes Professional adds the events from the first Track into the second Track, leaving the first Track as it was originally.

Delete

The Delete command removes the selected Track. A requester verifies the operation. Use Delete with care. Once you delete a Track, you cannot bring it back.

Load Track...

The Load Track... command loads a Track from disk. When you select this command, the file requester opens. Use it to select a Track for loading. Of course, in order to use the Load Track command, you must have a previously saved Track to load.

Load Group...

The Load Group... command is only available when in Group mode. To enter into Group mode, select one of the Group buttons, or hold down a shift key while clicking on multiple Tracks. Please see the Load Group command in the next section, The Group menu, below.

Save Track...

The Save Track... command saves the selected Track to disk. The file requester opens. Use it to select or create a file in which to save your Track.

Save As Default

The Save As Default command saves the selected Track to disk as "New.Track" in the Bars&Pipes Professional directory. Once you've saved a default Track, the New command loads this Track instead of creating a standard blank Track with standard MIDI In and Out Tools.

★ TIP ★ If you're working with MIDI connectors other than the standard MIDI In and Out, create a blank Track, install the MIDI Tools of your choice (for example, the

One-Stop Music Shop's,) place any additional Tools that you'd usually add to your PipeLines (Quantize, General MIDI, etc.) and save the Track with the Save As Default command. From then on, when you select the New command, the previously prepared Track loads.

Erase

The Erase command erases the Track, emptying it of its contents. The Track itself is not deleted, just erased. The Erase command leave Tools in the PipeLines unharmed.

Toolize

The Toolize command processes all notes in the currently selected Track with the currently selected Tool in the ToolPad. Please see Chapter 7, Tools, for more information.

NOTE → This command is ghosted if there is no active Tool in the ToolPad.

Time-Shift...

The Time-Shift... command moves everything in the selected Track forward or backward in time. When you select the command, Bars&Pipes Professional opens the Time Shift requester.



Enter the shift distance in measures, beats and clocks after the Shift: prompt. For example, "0.01.0" moves the time by zero measures, one beat, and no clocks. Click on the Forward button to move the music forward in time. Click on the Backward button to move the music backward in time.

NOTE → Be careful time-shifting backwards. Notes at the beginning of the Track collect at the very beginning because they can't have negative performance times.

Click Okay to confirm or Cancel to leave the Track unchanged.

Propagate

The Propagate command in conjunction with the A-B-A feature of the Song Construction window, copies changes made to the first instance of each section to all other instances of those sections (for the selected Track only).

NOTE → This command is ghosted if the A-B-A feature has not been utilized.

CHAPTER NINETEEN

Please see Chapter 21, Song Construction, for more information.

Print...

The Print command opens the print requester to print the Track. (Please see Chapter 11, Printing Notation.)

NOTE → Before Printing a Track, you should set up the Notation parameters by first opening the Graphic Editor for the Track.

The Group Menu

The Group menu is active when the Tracks window is in Group mode. To enter Group mode, click on one of the Group buttons or hold down a shift key while clicking on multiple Tracks.

Notice that the menu items Copy and Merge are disabled in the Group menu. They are only active in the Track menu.

Although you can only create Groups from the Tracks window, the Group menu is also available from the Song Construction and Media Madness windows, in case you need to use the Group editing features.

The following commands are found in the Group menu:

New

The New command creates a new Track and places it in the Group. The new Track receives standard MIDI In and Out Tools.

Delete

The Delete command removes the Group as a whole. Use this command with care! A requester asks you to verify the command.

Load Track...

The Load Track... command loads a Track from disk and places it in the Group.

Load Group...

The Load Group... command loads a Group from disk and adds it to the currently selected Group.

Save Group...

The Save Group... command saves the member Tracks of a Group to disk.

NOTE → You can reload the Group into a different Group number with the Load Group command.

Erase

The Erase command deletes all events in the Group. The Erase command does not delete the Tracks in the Group, just their contents.

Toolize

The Toolize command takes the currently selected Tool in the ToolPad and applies it to every event in each Track member of the Group.

NOTE → This command is ghosted if there is no Tool selected in the ToolPad.

Time-Shift...

The Time-Shift command offsets the timing of the Group by a specified amount. Please see the Time-Shift command in the Track menu for more information.

Propagate

In conjunction with the Song Construction window's A-B-A feature, the Propagate command copies changes to the first instance of each section to all other instances of those sections for the entire Group. This command is ghosted if the A-B-A feature has not been utilized.

Share Input



The Share Input command connects the PipeLines of all Tracks in the Group so that any input to the top Track goes to the other Tracks as well. The Share Input command uses the Merge In and Branch Out Tools to accomplish this, so make sure they are installed in the ToolBox for this command to function.

Gather Group

The Gather Group command reorganizes the Tracks window display so that all the Tracks in the selected Group are adjacent to each other.

Print...

The Print command prints only the Tracks in the selected Group. (Please see Chapter 11, Printing Notation.) Before Printing, be sure to set up the notation in each Track by opening each Track's Graphic Editor first.

The Master Time Signature

The Tracks window displays measure numbers and Time Signature Changes in the Flag Strip, directly above the Sequence display in the Tracks window.

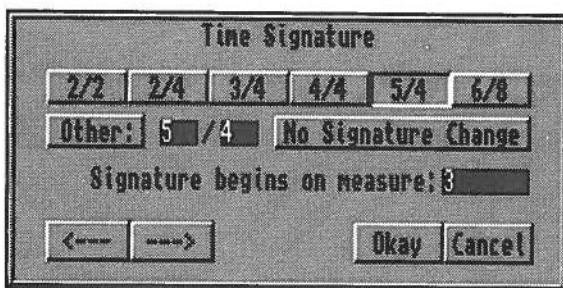


CHAPTER NINETEEN

The Tracks window displays each measure number unless a Time Signature Change occurs, in which case it displays the new Time Signature instead. These Time Signature Changes are the same Time Signature Changes accessed in the Master Parameters window.

Since each Track can have its own Time Signature, it is possible that some Tracks in your Song do not line up exactly with the Global Time Signatures.

NOTE → From within the Graphic Edit windows of these Tracks, you can use the Export and Import commands from the Master Parameters menu to exchange Time Signatures between Tracks and the Master Parameters Time Signatures. To insert, remove, or change a Time Signature, double-click on the measure with which you want to work. The Time Signature requester opens.



Selecting A Time Signature

Bars&Pipes Professional provides six standard Time Signatures, as well as a method to define custom Time Signatures. The six buttons across the top of this requester feature the pre-defined Time Signatures. Click on your preference to select it.

If you don't find one that meets your needs, create your own by first typing the values for the Time Signature after the Other: prompt. Then click on Other to select it.

NOTE → It is important that you first enter the values, and then click on the Other button to activate it. Clicking the Other button first, and then typing in the values won't work.

Placing The Time Signature On A Specific Measure

By default, Bars&Pipes Professional displays the measure in which the Time Signature change occurs after the "Signature begins on measure:" prompt. Change the measure by editing this number.

Adding A Time Signature

Adding: To add a Time Signature change, select the Time Signature and click on Okay to accept it.

Removing A Time Signature

Removing: To remove a Time Signature change, enter the Time Signature requester by double-clicking on the Time Signature you'd like to remove; click on the No Signature Change button; then select Okay.

Changing A Time Signature

Changing: To alter an existing Time Signature change, double-click on the Time Signature displayed above the Sequencer; then select a new Time Signature.

You can alter when a Time Signature change occurs by editing the measure number after the Signature Begins on Measure: prompt. Once you change the Time Signature to your liking, click on Okay to accept the change, or Cancel, to disregard it.

Selecting The Previous Or Next Time Signature Change

To go to the previous Time Signature change, click on the left arrow button in the Time Signature requester. The arrow finds the Time Signature prior to the one you are viewing and displays it, so that you can edit it. The right arrow button scans forward to the next Time Signature change.

Automatic Removal Of Identical Time Signatures

If you create two adjacent, identical Time Signatures, Bars&Pipes Professional removes the second one. To illustrate, if you have 6/8 on measure 5, then place 6/8 on measure 4, Bars&Pipes Professional discards the 6/8 on measure 5.

CHAPTER NINETEEN

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Chapter 20

Introduction

Although Bars&Pipes Professional includes sophisticated Graphic and List Editors, you can also perform many editing functions from the Tracks window. In particular, you can Cut, Copy, and Paste individual Tracks, or perform these functions globally on all Tracks. These operations involve the Edit Flags, Edit menu, and ClipBoard.

In addition to the Tracks window, you can also perform multi-track edits from the Song Construction and Media Madness windows. For our examples, however, we will concentrate on the Tracks window.

Clip Editing

All Edit menu operations use "Clips," which store and retrieve edited information. A Clip stores a section of music containing one or more Tracks. A Clip Buffer is a place in your computer's memory that stores a Clip.

The Track Clip Buffers

Each Track has its own Clip Buffer that stores a single Clip. The Cut and Copy commands replace the previous contents of the Track's Clip Buffer with the new Clip; the Paste and Mix commands copy the contents of the Clip Buffer to the Track.

The ClipBoard

Unlike an individual Track's Clip Buffer, the ClipBoard allows you to work with multiple Clips and presents you with filtering options. The Cut and Copy commands add a new Clip to the ClipBoard; the Paste and Mix commands copy the selected Clip to the Tracks. To use the ClipBoard instead of the Clip Buffer, open the ClipBoard by selecting ClipBoard from the Windows menu or double-clicking on the ClipBoard icon. While the ClipBoard is open, Clips are sent to it instead of the Track's Clip Buffers.

The Edit Window Clip Buffers

Although you don't use the Graphic and List Editor windows when editing multiple Tracks, it's important to understand their usage of Clip buffers:

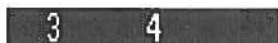
Like a Track, each Edit window maintains its own Clip Buffer. All Cut and Paste commands in the Editor's Edit menu use this Clip Buffer when the ClipBoard window is not open. When the ClipBoard window is open, the Edit window uses the ClipBoard, just as the multi-track editing operations do. This means that you can Cut and Paste between the Edit windows and

CHAPTER TWENTY

individual Tracks in the Tracks, Media Madness, and Song Construction windows.

The Edit Flags

Use the Edit Flags to mark a section of music for editing. The Flags look like purple slanted triangles, and sit directly above the Track displays in the Tracks, Media Madness, and Song Construction windows.



Position these Flags to indicate where you want your edits to occur. The left Edit Flag, designated by a triangular flag with the mast on the right, identifies where an edit operation starts, while the right Edit Flag, designated by a triangular flag with the mast on the left, identifies where an edit operation ends.

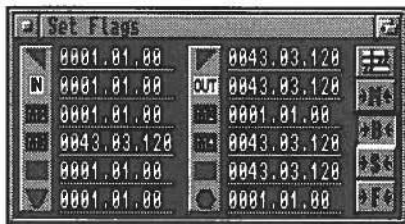
Positioning The Edit Flags

To position a Flag, drag it with the mouse. If the desired position is not visible in the display, first scroll the display so that the desired position is visible, then drag the Flag into position.

Dragging a Flag all the way to the left tells Bars&Pipes Professional to place it at the very beginning of your Song or Track. Dragging it all the way to the right indicates that you want it placed at the end of the Song or Track.

★ TIP ★ Notice that as you drag the Flag, its position is shown in the LED displays in the Transport Controls, Mini-Transport, and Tracks windows.

You can also position the Flags by entering exact values with the Set Flags Window. To enter exact values, open the Set Flags Window from the Windows menu.



Enter the values in Measures, Beats, and Clocks, or, if the SMPTE/Music Time button is set to SMPTE, set the time in Hours, Minutes, Seconds, and

Frames. Once you have entered a number, remember to press the Return key, which enters the new value and moves the Flag to its new position.

Flag Alignment

You can specify whether the Flag automatically aligns with Measures, Beats, Seconds, Frames, or Anywhere, by selecting the desired option from the Align with... command in the Preferences menu. If you select Align with Measures, the Edit Flag always sticks to the measure boundary just to the left of, or under, the place where you drag it. If you select Align with Beats, it sticks to the beat boundary. Seconds stick to seconds boundaries, Frames stick to SMPTE frame boundaries, and if you select Align with Anywhere, it stays exactly where you place it.

Alternatively, you can set the Alignment with the four Alignment buttons located in the Set Flags window. "->M<-" sets the alignment to Measures, "->B<-" sets the alignment to Beats, "->S<-" sets the alignment to Seconds, and "->F<-" sets the alignment to Frames. If no button is selected, the alignment is set to Anywhere.

NOTE → If you align the Edit Flags on measure boundaries, the Time Signature and Key & Scale/Mode Parameters will be incorporated in the edit. Otherwise, they will not.

Selecting Tracks to Edit

You can edit one Track, a Group of Tracks, or the entire Track list at once.

Editing One Track Only



To edit one Track only, select the Track, activate the Solo mode and choose the appropriate edit command. This is the only option available in the Graphic and List Editors.

Editing A Group Of Tracks



To edit an entire Group of Tracks, select that group with the Group Number button or make a temporary Group by shift-clicking several Tracks. Then solo the Group with the Solo button and choose the appropriate Edit command.

Editing All Tracks

To edit all Tracks, make sure the Normal/Solo/Mute button is in Normal mode, then mark off the desired area and use the appropriate edit command.

CHAPTER TWENTY

The Edit Operations

The Edit menu operations work in conjunction with the Edit Flags and the Normal/Solo/Mute button.

Once you have aligned the Edit Flags and set the Normal/Solo/Mute button, select the desired operation from the Edit menu. Once they've been executed, all of the Edit menu commands automatically turn off the Solo button (if selected), so that you can quickly listen to your changes.

The following shows the menu command followed by the hotkey in parenthesis.

Cut (Right Amiga - X)

The Cut command cuts a section from your Song or selected Track. Cut removes the section between the Edit Flags and shifts everything to the right of the section to the left Edit Flag. This is analogous to cutting out a section of tape physically and splicing the remaining ends together.

Use the Paste command to insert the Clip elsewhere in your Track, or the Mix command to merge the Clip with existing notes. Notice that the Solo button is automatically turned off, after the cut is made. If you plan to Paste into just one Track, you must reactivate the Solo button.

Copy (Right Amiga - C)

The Copy command copies a section, without actually removing it, for use with the Paste or Mix commands. Nothing visibly happens, but the section between the Edit Flags is now available for Pasting.

Paste (Right Amiga - P)

The Paste command inserts a cut or copied section into the Song or Track. It's not necessary to set the right Edit Flag, since the length of the inserted section is determined at the time it is cut or copied. For example, if you cut a four measure section, the Paste command inserts those same four measures and moves everything to the right of the insertion by four measures.

You can do multiple Paste operations with the same Clip it does not change until you cut or copy another section of the Track.

NOTE → Remember to activate the Solo button before you Paste, if you intend to Paste into just one Track or Group.

Mix

The Mix command merges a copied or cut section with the existing Song or Track. As with Paste, you need only set the left Edit Flag. Unlike the Paste command, Mix does not increase the length of the Track; rather it adds the notes to the notes already in the section.

Erase (Right Amiga - E)

The Erase command clears the section between the left and right Edit Flags. Erase removes all events and your Sequence is silent during this section. This is analogous to erasing a section of tape.

Insert (Right Amiga - I)

The Insert command inserts a blank space in your music. This command is useful when you want to add a section to your Song somewhere in the middle of it. Insert the section, then use whatever methods you prefer to fill the gap with music.

In other words, the section contained between the Edit Flags shifts to the right of the right Edit Flag, and the section between the edit flags is becomes empty.

Delete

To delete a section between the right and left Edit flags, use the Delete command. This command operates identically to the Cut command, but does not place the deleted section into the Clip buffer or ClipBoard.

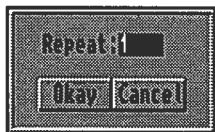
NOTE → You can still use the Undo command.

Toolize (Right Amiga - T)

The Toolize command uses the currently selected Tool in the ToolPad to process the section marked off by the Edit Flags. This command is ghosted if there is no Tool in the ToolPad.

Repeat (Right Amiga - R)

The Repeat command repeats a section of your Song one or more times. Repeat makes multiple copies of the section designated by the Edit Flags and inserts them in the Song.



When you select the Repeat command, a requester opens and asks you to specify the number of times to repeat.

NOTE → This is NOT the number of times that the section plays, but the number of times it repeats. Hence, selecting 1 repeats the section one time.

The repeated section appears immediately following the source section. Enter a number and select Okay to repeat, or Cancel, to abort.

CHAPTER TWENTY

Propagate (Right Amiga - A)

The Propagate command is the only Edit command used in association with the A-B-A feature of the Song Construction window. (Please see the Song Construction chapter.)

If you make a change to an A-B-A section and you'd like the change to be reflected in all other copies of that specific section, use the Propagate command in conjunction with the left Edit Flag.

To do so, place the left Edit Flag on or within the boundaries of the section to be propagated. Bars&Pipes Professional then rewrites all occurrences of that section to include the change.

For example, if you change some notes in the first instance of your "A" section, place the left Edit Flag within or on that section's boundaries and the Propagate command changes all other instances of your "A" section.

The Propagate command always uses the first instance of each section to make its changes; therefore, in order to use Propagate successfully, you must always edit the first section.

Undo (Right Amiga - U)

The Undo command returns your Song to its state prior to the last operation. In addition to undoing all of the commands in the Edit menu, it undoes other actions, including the last time you recorded.

Clean Cuts

The Clean Cuts option in the Preferences menu controls how Bars&Pipes Professional treats notes that extend over Clip boundaries.

Without Clean Cuts, when Bars&Pipes Professional creates a Clip, it extracts all notes up to the right Edit Flag and leaves the note durations untouched. If a note near the end of the Clip has a duration that hangs over beyond the right edit Flag, it overlaps when pasted in elsewhere.

With Clean Cuts enabled, Bars&Pipes Professional chops notes that overlap the start and end of the Clip into two notes apiece. And, when pasting, if two identical notes butt up to each other on the Clip boundary, it merges them into one.

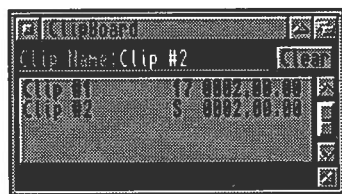
NOTE → The Clean Cuts option also controls how notes cut and merge when Punching in and out during recording.

The ClipBoard

The ClipBoard provides a convenient way to move music Clips from one Track or Group of Tracks to another. It also allows you to filter out events and Song parameters while you cut and paste. And, it provides a convenient storage spot to post Clips that you'd like to use later. You can even load and save Clips to disk.

Accessing The Clipboard

Use the ClipBoard with the Track, Song Construction, Media Madness, and any Edit window. To open the ClipBoard, double-click on its icon along the right side of the screen (the icon that looks like a Clipboard), or select ClipBoard from the Windows menu.



The ClipBoard window controls the use of the ClipBoard. Whenever the window is open, Clips are automatically sent to it, rather than the associated Clip Buffer. As long as the ClipBoard window remains open, all Clip edit operations in all windows pass their Clips through the ClipBoard.

The ClipBoard window displays the list of Clips, with the currently selected Clip highlighted. Each Clip in the list displays its name, the number of Tracks in the Clip, and the length of the Clip in Song-time.

NOTE → If the number of Tracks is denoted as a capital S, this means that the Clip is for a single Track only.

The ClipBoard Commands

To select a Clip, click on its name in the list. The Clip highlights and its name displays after the Clip Name: prompt. Use the scroll bar and arrows to scroll the Clip list up or down.

The following features are found in the ClipBoard window:

Clip Name

To change the name of the selected Clip, enter the new name after the Clip Name: prompt.

NOTE → By default, Bars&Pipes Professional assigns names in the form "Clip #<number>."

CHAPTER TWENTY

Clear

To remove a Clip, select the Clip, and then select the Clear button.

Load Clip

To load a previously saved Clip, use the Load Clip command from the File menu.

Save Clip

To save the selected Clip to disk, use the Save Clip command from the File menu. Once the file requester opens, select or enter a file name and click on Save.

Clear all Clips

To delete the entire list of Clips, select the Clear All Clips command from the File menu.

Editing with the ClipBoard

When you enable the ClipBoard, the four Edit menu commands, Cut, Copy, Paste, and Mix pass Clips to and from the ClipBoard. To Cut, Copy, Paste, or Mix an individual Track or Group of Tracks instead of all Tracks, click on the Solo button before selecting the specific edit command.

NOTE → When you Cut or Copy all Tracks into the ClipBoard, it displays a Clip size one greater than the number of Tracks. This happens because it also includes the hidden Master Parameters Track.

Edit Menu Commands And The Clipboard

Here is how each edit command behaves in conjunction with the ClipBoard:

Cut (Right Amiga - X)

The Cut command removes the section between the Edit Flags and places it in the ClipBoard. Notice that the new Clip is highlighted.

Copy (Right Amiga - C)

The Copy command duplicates the section between the Edit Flags and places it, highlighted, in the ClipBoard. The source Track(s) remains unchanged.

Paste (Right Amiga - P)

The Paste command inserts the selected (highlighted) Clip at the point marked by the left Edit Flag. The Clip remains in the ClipBoard, so that you can make multiple pastes.

You can control which Parameters and Event types you paste with the Include menu. (See below.) You can also control which Tracks receive pasted Clips. (See below.)

Mix

The Mix command merges the selected Clip into the target Track(s). This command excludes Parameters from the mix. You can, however, choose which MIDI Events to mix with the Include menu.

Cutting From One Track And Pasting Into Another

If you want to Cut and Paste from one Track to another, you must use the Solo button before each command. When the Solo button is used in conjunction with an editing command, the ClipBoard automatically opens if it is not already open.

To Cut from one Track and paste into another:

1. Highlight the Track you want to Cut (or Copy) from.
2. Set the Edit flags around the area you want to Cut (or Copy).
3. Click on the Solo button.
4. Select the Cut (or Copy) command from the Edit menu.
5. Highlight the Track you want to Paste (or Mix) into.
6. Set the left Edit flag to the position you would like to Paste (or Mix).
7. Click on the Solo button.
8. Make certain that the correct Clip is highlighted in the ClipBoard.
9. Select the Paste (or Mix) command from the Edit menu.

★ TIP ★ Another easy way to Cut and Paste from one Track to another is to use the Song Construction window. Please refer to that chapter for more information.

Filtering Clips With The Clipboard

The Include menu is available only when you have selected the ClipBoard window. This menu allows you to select specific Song Parameters and MIDI Events which will be included in the pasting or mixing.

By default, the Include menu includes everything but System Exclusive events. Omit those you don't want by clicking on the particular items in the menu.

NOTE → During a Mix operation, only MIDI Events are included, and not Parameters.

CHAPTER TWENTY

Multi-Track Clip Alignment

Clips can contain portions of several Tracks. Depending upon whether you're working with one Song or several, you may want to paste multiple Tracks differently. The Align Clips... selection in the Preferences menu gives you two ways to paste multi-track Clips.

When you select By Name, Bars&Pipes Professional pastes multi-track Clips into Tracks with the same names as the Tracks from which the Clips were cut or copied. This method is very useful for moving Clips between Songs, since you do not need to enforce a particular Track order for all of your Songs. Bars&Pipes Professional pastes only the Tracks that have matching names in the Song; other Tracks are not pasted, but do remain in the Clip.

When you select By Position, Bars&Pipes Professional pastes multi-track Clips into the selected Track, and Tracks below, until all Tracks are pasted. This method is useful for moving Clips between Tracks in the same Song, or between Songs without regard to Track names. Pasting "wraps around" from bottom to top, if necessary. For example, if you paste starting three Tracks from the bottom and five Tracks are in the Clip, Bars&Pipes Professional pastes the last two Clip Tracks in the top two Tracks of the Song.

Chapter 21

Overview

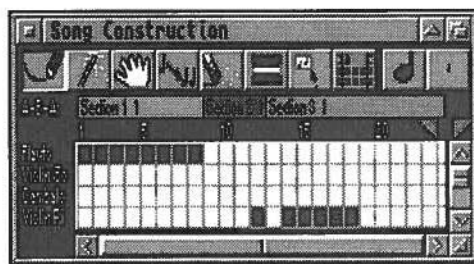
The Song Construction window provides powerful arrangement functions. You can insert, delete, or move any block of measures, as well as create and edit selected measures.

The Song Construction window also supports powerful A-B-A lists, which give you the option of locking measures to sections and rearranging your Song by rearranging the sections.

Access the Song Construction window by choosing the Song Construction option in the Main menu's Windows menu, or double-click on the Song Construction window's icon.

The Song Construction Window

There are four major parts to the Song Construction window:



The Track Display, the Track Names, the Edit Flags, the A-B-A Strip, and the Command Buttons.

The Track Display

Most of the Song Construction Window features the Track Display. The Track Display shows your Tracks as a series of small measure boxes. Each box represents a measure in a Track. White boxes contain at least one note. Grey boxes contain none. Boxes may change color during moves, deletions, or editing operations.

NOTE → If a note spans more than one measure, the second measure's box also displays white, indicating musical activity in that measure.

Above the Tracks are the measure numbers; these numbers give you an idea of where you are in your Song. If you have time signature changes in your

CHAPTER TWENTY-ONE

music, the measure boxes can be different sizes. Track names display to the left.

In conjunction with the Command Buttons (see below) you can perform the following operations in the Tracks Display:

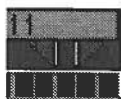
- Insert a measure with the Pencil.
- Open the Edit window for a measure with the Magic Wand.
- Move a measure from left to right within a Track, or even up and down across Tracks, with the Hand.
- Duplicate a measure with the Duplicator.
- Erase a measure with the Eraser.
- Toolize a measure with the ToolPad. The mouse icon turns into a Wrench when this button is selected.

The Track Names

The Track Names on the left also respond to several of the editing modes. You can:

- Create and insert a new Track by clicking in the Track Name area with the Pencil.
- Modify a Track name by clicking on it with the Magic Wand, or double-clicking with the Saxophone pointer.
- Move a Track up and down relative to the other Tracks with the Hand.
- Duplicate a Track by clicking on its Track name with the Duplicator.
- Erase a Track by clicking on its Track name with the Eraser.

The Edit Flags



The Song Construction window displays just the two Edit Flags. These are in fact the same as the Edit Flags in the Tracks window. Drag these to set edit boundaries and the same flags in the Tracks window and Media Madness windows follow to the new positions.

The A-B-A Strip

The narrow strip located between the Command Buttons and the Edit Flags contains the current A-B-A sections. This area is called the A-B-A Strip. When you open the Song Construction window for the first time, the A-B-A Strip is completely blank.

A-B-A sections can be named "A," "B," "C," etc. You can also assign more specific names such as "Verse," "Chorus," "Refrain," "Bridge," and "Finale."

Bars&Pipes Professional automatically numbers each section in the order it appears in the A-B-A strip, and assigns different colors to each type of section so that, at a glance, you can see transitions between sections.

You can perform the following editing operations in the A-B-A Strip:

- Create and insert a new A-B-A section with the Pencil.
- Modify an existing A-B-A section's name or length with the Magic Wand.
- Move an A-B-A section with the hand.
- Duplicate an A-B-A section with the Duplicator.
- Erase an A-B-A section with the Eraser.
- Toolize an A-B-A section with the Wrench. Click on the ToolPad in the Song Construction window to access the Wrench.

NOTE → The actual measures beneath the A-B-A sections are not changed in any way by modifying the A-B-A sections, until the Lock to A-B-A button is selected (please see below).

The Control Buttons

The Pencil



Use the Pencil (F1 key) to:

- Create and insert a new Track by clicking in the Track Names area.
- Insert a blank measure by clicking in the Track Display area.
- Create and insert a new A-B-A section by clicking in the A-B-A Strip.

The Magic Wand



Use the Magic Wand (F2 key) to:

- Rename a Track name by clicking on the Track name in the Track Names area.
- Open the Edit window for a Track at a selected measure by clicking on the measure in the Track Display area.
- Modify the name and length of an A-B-A section by clicking on the A-B-A section in the A-B-A Strip.

CHAPTER TWENTY-ONE

The Hand



Use the Hand (F3 key) to:

- Move a Track up and down relative to other Tracks by clicking and dragging a Track's name in the Track Names area.
- Move a measure in the same Track, or across Tracks, by clicking and dragging in the Track Display area. Use the Hand in conjunction with the Bounding Box to move a group of measures.
- Move an A-B-A section forward or backward by clicking and dragging. The measures beneath the A-B-A section are moved only if the Lock to A-B-A button is also selected. Otherwise, just the A-B-A section marker moves.

The Duplicator



Use the Duplicator (F4 key) to:

- Duplicate a Track by clicking on the Track's name in the Track Names area.
- Duplicate a measure by clicking and dragging the measure in the Track Display area. Use the Duplicator in conjunction with the Bounding Box to duplicate a group of measures.
- Duplicate an A-B-A section by clicking and dragging in the A-B-A Strip. The measures beneath the A-B-A section are duplicated only if the Lock to A-B-A button is also selected. Otherwise, just the A-B-A section marker is duplicated.

The Eraser



Use the Eraser (F5 key) to:

- Erase a Track by clicking on the Track's name. A requester asks you to confirm your decision.

NOTE → You cannot "unerase" once you've used the Eraser.

- Erase a measure by clicking on the measure in the Track Display area. Use the Eraser in conjunction with the Bounding Box to erase a group of measures.
- Erase an A-B-A section by clicking on the section in the A-B-A Strip. The measures beneath the A-B-A section are erased only if the Lock to A-B-A button is also selected. Otherwise, just the A-B-A section marker is erased.

The ToolPad



Clicking on the ToolPad causes the mouse pointer to turn into a Wrench. Use the Wrench to:

- Toolize a measure by clicking on the measure in the Track Display area. Use the Wrench in conjunction with the Bounding Box to Toolize a group of measures.
- Toolize an A-B-A section by clicking on the section in the A-B-A Strip. This only works if the Lock to A-B-A button is depressed.

The Bounding Box



Use the Bounding Box (F6 key) to edit groups of measures in the Track Display area in conjunction with the Hand, Duplicator, Eraser, and ToolPad.

The Lock To A-B-A Button



Activate the Lock to A-B-A button when you want to have changes made to the A-B-A sections in the A-B-A Strip to also affect the measures beneath the Strip.

Deactivate the Lock to A-B-A button when you just want to affect the A-B-A sections themselves without affecting the measures beneath.

The Zoom In And Zoom Out Buttons



The Zoom In button is the large note button. Click on it to enlarge the display by one step. This gives you finer control, but shows fewer measures.

The Zoom Out button is the small note button. Click on it to reduce the display by one step. This allows more measures to be displayed, at the loss of fine editing control.

A-B-A Section Editing

Not only are A-B-A sections useful for labeling your music, they can also be used to physically rearrange your music.

By using the Lock to A-B-A button, you can reposition, copy, add and/or delete labeled sections of music. You can also make changes to the first occurrence of each labeled section and propagate those changes throughout your Song.

NOTE → Propagate, in this context, means to copy the changes made in the first occurrence of a section to all other occurrences of that particular section within your Song.

CHAPTER TWENTY-ONE

Arranging Your Composition

When setting up your A-B-A layout, remember to deselect the Lock to A-B-A button in the Song Construction window. This ensures that Bars&Pipes Professional will not rearrange your music as you rearrange the section labels. Use the Pencil to create new sections, the Duplicator to copy them, and the Wand and hand to change and move them.

Once you've set up the A-B-A sections, enable the "Lock to A-B-A" button. Then, rearrange your Song by simply dragging, duplicating, erasing, and inserting sections. As you do so, the music underneath follows the lead of the section markers.

Propagating Changes

Bars&Pipes Professional automatically copies changes made to a section to all other identically named sections with the Propagate command. For example, if you edit section "A" and then execute the Propagate command, Bars&Pipes Professional inserts the changes in all other sections named "A."

The Propagate command appears in three separate menus: the Song menu, the Track (or Group) menu, and the Edit menu, all of which can be accessed from the Tracks and Song Construction window. The Propagate command behaves differently in each menu:

- In the Song menu, the Propagate command copies changes made to the first instance of each section to all other instances of those sections throughout your Song.
- In the Track menu, the Propagate command copies the first instance of each section to all other instances of those sections, *for the selected Track only*.

NOTE → When you have a Group selected, the Track menu becomes the Group menu. In this case, the Propagate command, working on the Group as a whole, copies changes made to the first instance of each section to all other instances of those sections within the Group.

- In the Edit menu, the Propagate command copies changes made to the first instance of a specific section to all other instances of that section. Mark the section by dragging the left Edit Flag on or within its boundaries. The Propagate command works on the section that contains the left Edit Flag; don't forget to set it.

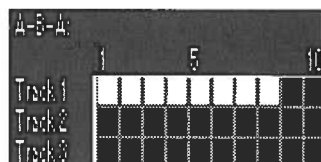
In all cases, the Propagate command copies to all other instances of that section, only the changes made to the first occurrence of each section. You must make your changes to the first of each section in order to use Propagate.

NOTE → Remember: For Propagate to work, identical sections must retain identical names. If you rename a section, it automatically becomes independent of all sections with its previous label.

An A-B-A Example

Let's use the Song Construction window and the A-B-A feature in an example. First, starting with a new Song, create eight measures of music on Track 1 in any way you see fit. We will split this eight measure section up into five measures plus three measures. Therefore, make certain that there are no notes dangling from measure five into measure six.

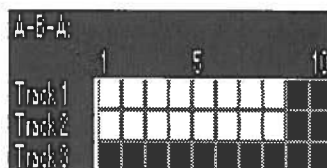
Once you've created your eight measures, open the Song Construction window. Bars&Pipes Professional lists your Tracks with the eight measures you've created highlighted in white. All other measures are grey.



Copying Measures From One Track To Another

Just for the fun of it, let's copy the eight measures in Track 1 over to Track 2. Click on the Duplicator button and the Bounding Box button. Then click on the white square representing measure 1 in Track 1, and drag the mouse until it is over the white square representing measure 8 in Track 1. A rubber banding box shape stretches over the eight measures.

Lift the mouse button, and then click on the area you just put the box in. Slide the mouse downward until the eight measures in Track 2 highlight in blue. Release the mouse button to copy the measures.

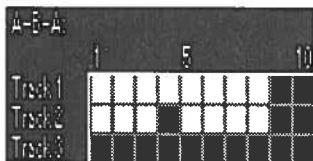


Erasing A Measure

Erase measure four in Track 2. To do so, click on the Eraser, then click on the white square representing measure four in Track 2. The white square

CHAPTER TWENTY-ONE

disappears and is replaced by a grey square. If it remains white, this means that there is a note in measure three that extends into measure four. In this case, select Clean Cuts from the Preferences menu, and erase measure four again. The note will be cleanly cut so that measure four is clear of all notes.



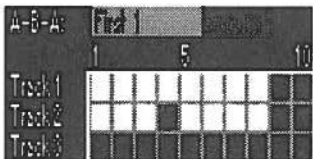
NOTE → Our purpose for erasing measure four in Track 2 is to provide a asymmetrical grid, so that we can see our editing operations reflected in the Tracks area.

Creating Two A-B-A Sections

Now that we have two Tracks of music, let's create the A-B-A sections. Choose the Pencil. The Duplicator and Bounding Box buttons will automatically deselect. Click with the Pencil after the A-B-A: prompt, and above the Edit flag area above measure 1. A requester will appear.

The section label, by default, will be "A". Change the label to "First". Set the Measures: slider to 5 measures. Click on the Okay button. You'll see a colored bar with your label and appear in the A-B-A: area.

Click with the Pencil again, this time to the right of the colored bar. The requester will appear again. enter the name "Second" in the Section Name: area. Set the Measures: slider to 3 measures. Click on the Okay button. You'll see another colored bar appear after the first.



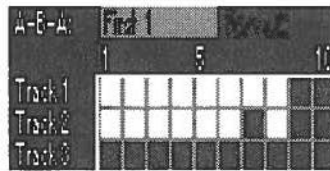
Arranging The A-B-A Sections

To arrange your A-B-A sections, first make sure that the Lock to A-B-A button is turned off. Then click on the Hand button to enter Drag mode.

Grab the First colored bar, and drag it to the right of the Second bar. The two bars exchange position. The music below does nothing, because the lock to A-B-A button is deselected. Now, grab the Second bar and drag it to the right of the First. The two bars return to their original position.

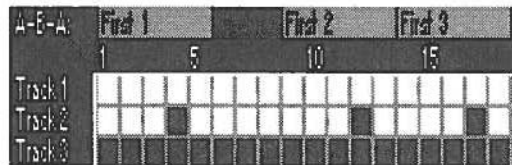
Now, click on the Lock to A-B-A button to activate it. Repeats the steps in the paragraph above. Notice anything different? When the Lock to A-B-A button is on, the actual measures beneath each A-B-A strip exchange positions along with the Section Names.

You can use any of the mouse modes to operate on the A-B-A sections. While the Lock to A-B-A button is on, any operation you do to an A-B-A section will also be done to that section's measures. Erasing a section will erase the measures, duplicating a section will duplicate the measures, etc. Experiment.



Duplicating A-B-A Changes

Now, activate the Lock to A-B-A button (if it is not still activated). Use the Duplicator to duplicate the Section Names above your music by clicking on the Duplicator, and then clicking and dragging the Section Names. Make a few copies of the A-B-A section, "First." Arrange these sections in any way you like. The music underneath will be copied along with the sections.



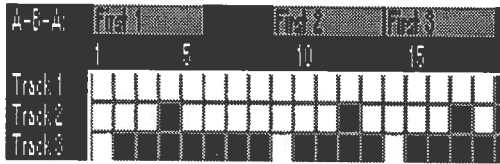
Propagating A-B-A Changes

Let's assume that measure 1 is the beginning of the A-B-A section, "First" and Tracks 1 and 2 have musical information on them. Now, let's create some music on Track 3 on measure 1. Normally, we would probably record new music into measure 1, but for the sake of brevity, let's just select the Duplicator (without the Bounding Box) and copy measure 1 of Track 2 into measure 1 of Track 3. You'll notice that only the first instance of the "First" A-B-A section has Track 3's music in it. This is where the Propagate command comes in.

Choose the Propagate command in the Song menu. The information contained under the first "First" will be copied so that it is under each "First" section, while the information contained under the first "Second" will be

CHAPTER TWENTY-ONE

copied so that it is under each "Second" section. Notice that the music in Track 3 is now underneath every instance of the "First" section.



You can use the Propagate command in the Edit menu if you'd like to propagate changes from the section marked by the Left Edit Flag, or use the Propagate command in the Track menu if you'd like to propagate changes on one Track only.

Chapter 22

Overview

In traditional recording, mixing a Song means combining the recorded Tracks down to a final form. Mixing includes, among other things, setting relative volume levels of each Track and setting stereo positioning of each Track.

Mix Maestro brings mixing capabilities to your Bars&Pipes Professional compositions, giving you real-time control over the mixing process.

Use Mix Maestro to control volume and panning of individual Tracks in your Songs. Mix Maestro does this by entering Control Changes into each Track. Most MIDI instruments respond to Control Change #10 as panning and Control Change #7 as volume. However, Mix Maestro can send out any Control Change that you specify.

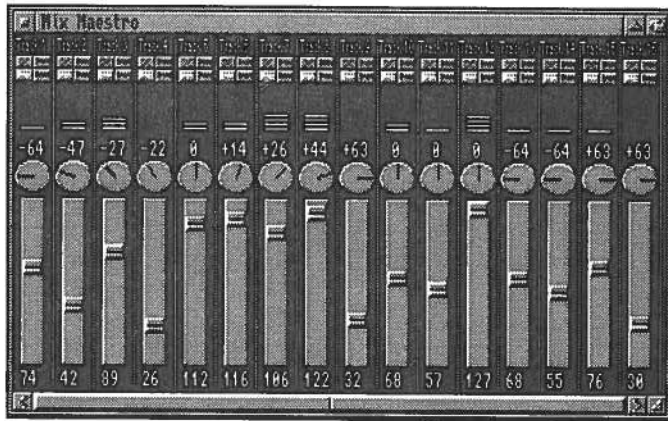
Mix Maestro actually records these Control Changes directly into each Track. Once you've created a mix with Mix Maestro, you can view and edit the mix by looking at the Control Changes in each Track with the Sequence or List Editor.

During playback, Mix Maestro's volume sliders and panning knobs follow along with the Control Change information in each Track. They also follow along with real-time Control Change information if you are using a real-time controller during recording.

The Mix Maestro Window

To start Mix Maestro, select the Mix Maestro command from the Windows menu or double-click on the Mix Maestro icon along the right side of Bars&Pipes Professional's screen.

CHAPTER TWENTY-TWO



The Mix Maestro window displays three sets of controls for each Track in your composition. Note that the Track names displayed at the top of the window match the Track names in the Tracks window.

The Mix Maestro Controls

Mix Maestro has three sets of controls for each Track: the Lock/Mute buttons, the Panning knob, and the Volume slider.

When you run your Song with Mix Maestro open, the Panning knobs and Volume sliders move with whatever panning and volume information (actually the values of Control Change parameters #10 and #7) you've already recorded in your Song.

The Panning Knob

The Panning knob usually alters the Control Change #10 parameter. This controls the balance, or "pan" of the instrument between the left and right speakers.

To use the Panning knob, press and hold the left mouse button over the knob and drag the mouse left and right. Notice the thin pointer move, and the numeric counter above the knob change, as you drag the mouse.

With the knob in the 9 o'clock position (counter showing -64), the Track position is full left (no power at the right channel for this Track). With the knob at the 3 o'clock position (counter showing 63), the Track position is full right. Intermediate settings yield intermediate positions; when the counter shows 0, you have a perfect balance between the left and right channels.

While dragging the knob, you can move the mouse outside the knob itself; as long as you hold down the mouse button, the pointer follows your moves.

- ★ TIP ★ You can move the mouse out toward the edges of the screen to get finer control over the knob position.

The Volume Slider

The Volume slider usually alters the Control Change #7 parameter. On most synthesizers, this parameter controls Volume.

To use the Volume slider, drag the small square up and down in its Track. Watch the numeric counter at the bottom of the Mix Maestro window; as you move the Volume slider, this number changes to show you the exact volume level.

The numbers range from 0 (silence) to 127 (full volume).

The Mute Button



There are four buttons below each Track name. The button in the upper left corner is the Mute Button. This button corresponds with the Thru/Play/Mute selector in the Tracks window.

To mute a Track, activate the Mute Button. To unmute a Track, deactivate the Mute Button. Notice that the Thru/Play/Mute faucet in the Tracks window and Media Madness window follows along with this button, and vice versa.

The Lock Buttons



The remaining three buttons are the Lock buttons. In Lock mode, the Volume sliders of several Tracks can be tied together. When moving the slider in a Track that is Locked, the other Locked Tracks follow along, keeping their positions relative to each other.

There are three lock buttons, each with a different color. Tracks that have the same color activated are locked together.

For instance, let's say that Track 1 and Track 2 are locked together. Track 1 is at a volume of 127, and Track 2 is at a volume of 64. If we move Track 1's volume slider halfway down to 64, Track 2's volume slider moves halfway down to 32.

NOTE → To save CPU processing time, the other Tracks' sliders don't actually move, but the numbers underneath the sliders are continuously updated. When you let go of the slider, the other sliders move to their new positions.

Locking is very useful when dealing with groups of related instruments, such as drum effects or a horn section, which tend to be grouped in a live performance.

Without locking Tracks, it would be impossible to change more than one Track at a time, or to fade all Tracks at once at the end of the Song.

CHAPTER TWENTY-TWO

If you want to lock all the Tracks in your Song together, select Lock All from the Mix Maestro menu. This sets the Lock button on all Tracks that are not already locked. Conversely, you can select Unlock All from the Mix Maestro menu to unlock all Tracks.

The Mix Maestro Menu

The MixMaestro window has its own menu, the Mix Maestro menu. These commands can be accessed only from the MixMaestro window. The following lists each option contained in the Mix Maestro menu:

ByPass Mix

The ByPass Mix option disables Mix Maestro. This option filters out the Control Changes selected with the Set Controllers menu option during playback.

NOTE → These Control Change values are normally 10 for panning and 7 for volume. Use the Set Controllers... menu option to change them.

Copy Mix to ClipBoard

The Copy Mix to ClipBoard option copies the Control Changes selected in Set Controllers into a Clip in the ClipBoard. This operation works even if the ClipBoard is not open.

★ **TIP** ★ This command, in conjunction with the Paste Mix and Clear Mix commands, provides a method for saving and auditioning different mixes.

Paste Mix From ClipBoard

The Paste Mix From ClipBoard option replaces the current Mix with the one highlighted in the ClipBoard.

NOTE → Use the Copy Mix to ClipBoard command to create the Clip.

Clear Mix

The Clear Mix command erases from all Tracks the Control Changes selected in Set Controllers.

Clear Locked Pans

The Clear Locked Pans command erases the Control Change selected as panning in Set Controllers from each locked Track. This command operates independently on Tracks locked with either the yellow, blue, or purple locks. Select the appropriate color from the Clear Locked Pans submenu.

Clear Locked Volumes

The Clear Locked Volumes command erases the Control Change selected as volume in Set Controllers from each locked Track. This command operates independently on Tracks locked with either the yellow, blue, or purple locks. Select the appropriate color from the Clear Locked Volumes submenu.

Lock All

The Lock All command sets one of the three colored locks on all Tracks. Choose the color from the Lock All submenu.

UnLock All

The UnLock All command deselects one of the colored locks on all Tracks. Choose which color of lock to deselect from the UnLock All submenu.

Mute All

The Mute All command mutes all Tracks.

UnMute All

The UnMute All command unmutes all Tracks.

Set Controllers

The Set Controllers command opens the Mix Maestro requester, allowing you to set which Control Change corresponds to panning or volume. Slide the appropriate slider to the value you would like to use for each effect.

SnapShot

The SnapShot command enters the current volume and panning information into each Track at the current Song Position. Use the SnapShot command to set initial values, and to create jumps from one value to another.

Select Yellow, Blue, Purple, or All from the SnapShot submenu to enter the Control Changes into locked Tracks or all Tracks respectively.

Recording with Mix Maestro

To use Mix Maestro, open the Mix Maestro window and click the Start or Play buttons in the Transport Controls window. If you already have Control Change #10 or #7 events in your Song, the knobs and sliders for each Track move with the set values as the Song plays. Dragging the Volume slider or Panning knob for any Track overrides the Control Change information in your Song, and replaces it with the values you set. If you have several Tracks locked together, all the locked Tracks immediately reflect the changes you make to any of them.

Setting The Initial Mix

Before you begin your mix, set each Tracks pan and volume positions so that your Song begins with these values. To do so, first set all your panning knobs and volume sliders to the desired positions for each Track and your Song Position marker to the first measure of your Song.

CHAPTER TWENTY-TWO

Next, select the Snapshot command from the Mix Maestro menu. This command grabs the position of your knobs and sliders and places their respective Control Change values at the current Song Position in each Track.

Recording The Mix

To record the mix, click on the Start button in the Transport Controls. As the music plays, click on a volume or pan pot and drag it as appropriate. When you've recorded one Track's mix, click on Stop in the Transport Controls, then click on Start to mix another Track. Continue in this manner until you've mixed all Tracks.

NOTE → You don't have to place your Track in record mode to record a mix in the Mix Maestro window.

As you mix your music, Mix Maestro's knobs and sliders move in real-time, automating your mix.

Undoing Or Bypassing Your Mix

If you are unsatisfied with your mix, you can undo your efforts. To clear the volume or pan information from one or more Tracks, select Clear Locked Volumes and Clear Locked Pans respectively from the Mix Maestro menu. Doing so effects all Tracks locked with a Lock button. If you are unhappy with your mix as a whole, use the Clear Mix command from the Mix Maestro menu to clear all pan and volume information. If you pleased with your mix, but want to disregard it temporarily, use the Bypass Mix command.

Saving And Restoring Your Mix

Once you're satisfied with your mix, you can save it in the ClipBoard and retrieve it at a later time. From the Mix Maestro menu, use the Copy Mix to ClipBoard command to save your mix as a Clip. Once you've copied a mix into the ClipBoard, use the ClipBoard's File menu to Load and Save your mix to disk. When you want to retrieve a mix from the ClipBoard, use the Paste Mix from ClipBoard command.

Chapter 23

Overview

When you create a soundtrack for a movie, video, or multimedia production, you often need to synchronize several disjointed sections of music with specific points in the movie.

Bars&Pipes Professional's Time Line Scoring feature gives you a high-level view of your soundtrack, and allows you easily to position any number of music sections in SMPTE time. Each of the music sections is actually a full-fledged Bars&Pipes Professional Song, complete with multiple Tracks and its own Tempo Map.

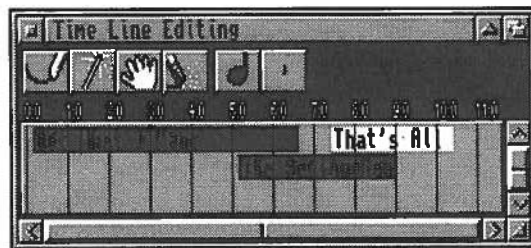
Use the Time Line Scoring window to load multiple Songs and position them relative to each other. Time Line Scoring adds each Song's Tracks to the Track list and recomputes the master Tempo Map to include the time period of each Song.

- ★ TIP ★ You can access other Songs' Tracks by scrolling the Track display down below the current Song's Tracks.

Before you use Time Line Scoring, you must first create, edit, and save each section as a separate Song. Once you add a Song to the Time Line Scoring window, you can still perform all the standard Bars&Pipes Professional editing operations on the Song.

Accessing

Open the Time Line Scoring window by double-clicking on the Time Line Scoring icon, or using the menu option in the Windows menu.



The Scoring Grid

The Scoring Grid occupies most of the Time Line Scoring window. Rectangular colored areas with Song titles display in the Scoring Grid. These represent the Songs in memory.

CHAPTER TWENTY-THREE

The numbers above the scoring grid represent the time in minutes and seconds. By looking at the position of the Song rectangles, you can see at what time a Song begins and ends. For more exact information, click on the Song rectangle with the Magic Wand (please see below).

NOTE → Only the horizontal (side-to-side) placement affects the Songs' start time.

Adjusting The Zoom

The Zoom In button is the large note. Click on it to enlarge the display by one step. This gives you finer control, but shows fewer measures.

The Zoom Out button is the small note. Click on it to reduce the display by one step. This allows more measures to be displayed, at the loss of fine editing control.

Using Time Line Scoring

Adding A Song

To add a Song to the Time Line Scoring window, select the Pencil (or F1 key) and click in the Time Line window. Bars&Pipes Professional opens the File Requester.

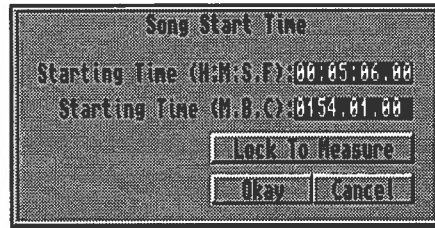
When you select the Song you want to include in the soundtrack, Bars&Pipes Professional loads the Song and inserts a colored bar in the Time Line window with the Song title inside. The Song starts at the point at which you clicked with the Pencil. Each Song has a different color, so that you can easily see where one Song ends and another begins.

When you add a Song with Time Line Scoring, the Tracks of the Song are appended to the Tracks that already exist in the Tracks window.

Adjusting The Song's Start Time

One way to adjust the Song's start time is to drag the Song rectangle with the Hand. To do so, click on the Hand button (or choose the F3 key). Then click and drag the Song forward or backward in time.

You can also adjust the Song's start time by entering a start time. Click with the Magic Wand (F2 key) on a Song rectangle to bring up the Song Start Time requester.



The Song Start Time requester shows you the current start time of the Song, in SMPTE time and Song time. Click in either field to enter a new starting time for the Song.

NOTE → Tempo changes, Time Signatures, and the SMPTE Global Offset affect the SMPTE starting time of the selected Song.

You can use the Lock to Measure button when you want to move the start time of the Song to the nearest measure boundary when inserting a tempo change. This is handy since the Song Time rarely lands on the beginning of a measure.

To use align your Song with a measure boundary, click on the Lock to Measure button. Bars&Pipes Professional calculates a tempo change and inserts it into the measure immediately before the selected Song. The measure number designated by the Starting Time: prompt equals the sum of all measures in the soundtrack up to this point.

★ TIP ★ When you first create a Song, notes are generally lined up with measures. However, when you connect multiple Songs in the Time Line Scoring window, note can be shifted in time, relative to their original measure positions. If you need to edit a Track, use the Lock to Measure button, then deselect Lock to Measure when you're finished editing.

Combine TimeLine Options

Each Song maintains its own A-B-A section list, Tempo Map, and Song Parameters. Every time you reposition a Song in the TimeLine, Bars&Pipes Professional must recalculate the complete performance's A-B-A section list, Tempo Map, and Song Parameters from the component parts. As such, it's desirable to control which portions get recomputed and which are left alone.

Use the Combine TimeLine... options in the Preferences menu to control how Bars&Pipes Professional recomputes each of the following parameters:

Sections

If the Sections option is enabled, Bars&Pipes Professional computes a new A-B-A section list out of the component parts. Otherwise, it uses the A-B-A

CHAPTER TWENTY-THREE

section list that existed before the repositioning of a Song portion required recalculating the A-B-A section list.

Tempo Maps

If the Tempo Maps option is enabled, Bars&Pipes Professional computes a new tempo map out of the component parts. Otherwise, it uses the tempo map that existed before.

Song Parameters

If the Song Parameters option is enabled, Bars&Pipes Professional computes a new set of Song Parameters out of the component parts. Otherwise, it uses the Song Parameters that existed before. Remember, the Song Parameters include Lyrics, Time Signature, Chord Changes, Dynamics, Rhythms, and Key Signature.

Removing A Song

Use the Eraser (F5 key) to delete a Song from the soundtrack. Click on the Song you want to delete. A requester asks you to confirm your decision.

Chapter 24

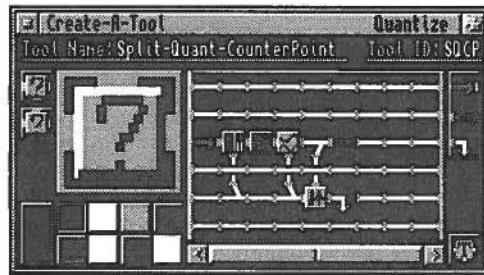
Overview

You can create and edit your own MacroTools in the Create-A-Tool window. A MacroTool is a Tool created by combining several Tools into one. Like the Tools provided with this program, a MacroTool has one input, one output, and an icon representing it. Not only is the use of MacroTools a convenient way to keep your PipeLines from overcrowding (you can take a string of commonly used Tools and create a MacroTool to replace them,) but it's a very potent method for making specialized Tools of your own design.

The Create-A-Tool Window

The Create-A-Tool window enables you to design your own MacroTools. Access the Create-A-Tool window from the ToolBox by choosing the Create MacroTool... option from the ToolBox window.

If you'd like to edit an existing MacroTool, choose the Edit MacroTool... option after you've highlighted an existing MacroTool in the ToolBox. Alternatively, you can double-click on an existing MacroTool in the ToolBox to open its Create-A-Tool window.



MacroTools: A List of Ingredients

Each MacroTool contains several important parameters:

A Unique Name

Each MacroTool has a unique name and a four-letter identifier.

For example, a Tool that creates random harmonies could be called "Split-Quant-Counterpoint" and the identifier could be "SQCP." You use the full name, "Split-Quant-Counterpoint," to describe the Tool for your

CHAPTER TWENTY-FOUR

reference. Bars&Pipes Professional uses the identifier, in this case "SQCP," for internal operations that require speed and compact size.

If you choose not to give an identifier a name, Bars&Pipes Professional automatically assigns one.

An Icon

Each Tool must have an icon to display in the ToolBox, PipeLine and/or ToolPad. In addition, if the Tool has a branching output and can send data two places at once, it requires two icons: one for when the Tool is above the receiving Tool (the connector is on the bottom of the Tool) and one for when the Tool is below the receiving Tool. (The connector is on the top of the Tool.)

Tools

A MacroTool consists of a collection of interconnected Tools. You arrange these Tools on a grid of PipeLines, much like the PipeLines in the Main Screen.

For example, our Split-Quant-Counterpoint MacroTool feeds notes to a Keyboard Split Tool, which sends notes below the split point to an Echo Tool. The notes at or above the split point enter the Quantize Tool, then, the CounterPoint Tool.

Input And Output

A MacroTool can have only one input; therefore, you must identify the Tool that accepts incoming notes as the input of the MacroTool. Also, you must label the last Tool in the MacroTool as the output. In addition, if this MacroTool is capable of sending a branched output, you must identify the Tool that sends notes down the branch.

Tool Parameters

Some of the Tools in the MacroTool may have parameters that can be preset.

For example, you might, in your MacroTool, use a Transpose Tool that always shifts a note by a predetermined interval. This requires presetting that component Tool in your MacroTool.

Constructing Your MacroTool

To construct a MacroTool, open the Create-A-Tool window by selecting Create MacroTool from the ToolBox menu. This menu is only available from the ToolBox window. The Create-A-Tool window opens with a new, blank MacroTool, ready to assemble.

Naming Your MacroTool

Across the top of the window are two text entry fields, Tool Name: and Tool ID:. Bars&Pipes Professional automatically supplies a default name and a unique default ID. To name your Tool, click on the Name: field and enter a description of your Tool.

NOTE → Changing the ID is optional.

Painting The MacroTool Icon

On the left side of the Create-A-Tool window is a box with an enlarged icon in it. Since a Tool can have two icons, both are displayed at their normal size to the left of this box. To choose which icon is enlarged, click on one of the two.

Below the box is a Palette of eight colors. To paint the icon, select the paint color by clicking on it in the Palette and draw your icon in the box. Like any other paint program, you draw by clicking down with the mouse and dragging it. The MacroTool window displays the selected color in the tall box to the left of the Palette.

From the Paint menu, you can choose from the following commands:

Clear

Clear sets the entire icon to the color currently selected in the Palette.

Copy

Copy duplicates your MacroTool icon. Bars&Pipes Professional needs the extra icon for MacroTools that branch off to Tools above or below. Alter the duplicate so that the placement of the output Pipe inverts. If you've created a branching MacroTool, draw your main icon, then duplicate it with the Copy command and edit the position of the outgoing Pipe to go up.

Flip...

Flip... turns your icon around an axis. To flip from top to bottom, choose Flip Vertically. To flip from left to right, choose Flip Horizontally.

Start With...

Start With... provides a choice of four pre-defined icons. To select a pre-defined icon (a time-saver), drag the mouse over your icon of choice and lift up. That icon now appears in the Paint Box.

Flood Fill

Flood Fill paints an entire area of the icon with the selected color. To use the Flood Fill command, first select the fill color and the Flood Fill command. Then, with the mouse, touch the area to be painted and click the mouse. For instance, if you have a red shape you'd like to make yellow, select yellow

CHAPTER TWENTY-FOUR

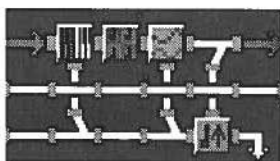
from the Palette, select Flood Fill from the menu, then click on the center of the shape. It's now filled with yellow.

Undo

Undo reverts the icon to the state that existed prior to your most recent action.

Adding And Connecting Tools

Once you've set up your MacroTool icon, you're ready to build your MacroTools using existing Tools.



Adding

In the large box on the right half of the Create-A-Tool window sit six PipeLines. To construct your MacroTool, drag your Tools of choice from the ToolBox and place them on any one of the PipeLines. Determine which PipeLine is the input line and place the first Tool there. Continue by placing the Tools that follow it to the right of the input Tool on the PipeLine. To reposition the placement of a Tool in the PipeLine, select it by clicking on it once. A red box appears around it. Then press either the Left or Right Arrow keys to move it.

Duplicating

To duplicate a Tool already in the Create-A-Tool window, drag the Tool to a new location. Bars&Pipes Professional creates an exact copy of the Tool, including its parameter settings.

Removing

To remove a Tool, select it, then press the Delete key.

Connecting

If a Tool has a branching output, place a Merge In Tool on another PipeLine. (The Merge In icon looks like a Pipe with another Pipe feeding into it above from the left.) This second PipeLine is now active and Tools can be placed in it as well. When you first place the Merge In Tool in the second PipeLine, it may not line up with the source Tool because they have not yet been connected. To connect a Merge In Tool with another Tool, click on the source Tool (the Branching Tool,) select Connect (Right Amiga - K) from the PipeTool menu, then click on the target Tool (the Merge In Tool). The two

icons are now connected and the display is redrawn with everything positioned appropriately.

If your PipeLine is long and you start running out of room, scroll it forward by using the slider and arrows at the bottom of the display. Your MacroTool can be as long as you need.

Determining The Input And Output(s)

To the right of the PipeLine grid are three arrow-shaped icons. Drag these onto your Tool layout to specify the input and output(s).

Input



The top icon, the In arrow, is a blue arrow that selects the input. Drag and place it to the left of the first Tool in your MacroTool lineup. All notes coming into the MacroTool pass through here first. You cannot delete the input arrow. If you want to send the input to a different PipeLine, drag another blue arrow to it; the arrow to your previously selected PipeLine automatically disappears.

Normal Output

The middle icon, the Out arrow, is a red arrow that represents the Normal Output. Drag it to the right of the last Tool in your Macro sequence. Whatever comes out of that last Tool comes out of the MacroTool as a whole. Unlike the Input arrow, you can have more than one Normal Output per MacroTool because you can use several PipeLines in your design. The MacroTool merges notes coming out of all Normal Output icons. If you want to remove a Normal Output icon, select it, then hit the Delete key.

Branching Output

The bottom icon, the Branch arrow, is a purple arrow that represents the Branching Output. This arrow is optional. Whereas every MacroTool requires an Input and an Output, a MacroTool requires a Branching Output only when the MacroTool needs to send events off to a second PipeLine. Install the Branching arrow in the same way that you install the Output arrow.

Once you have a Branching Output, the alternate icon, on the left of the Paint Box, comes into play. This alternate icon behaves identically to the original, except that it branches off in the opposite direction. In this way, you can have a MacroTool that connects to a Tool above and to a Tool below.

Setting The Tool's Controls

Many of the Tools that constitute your MacroTool have parameters that you can preset. For example, the Triad Tool uses two Transpose Tools to shift the input note up a third and up a fifth. It is an example of a MacroTool.

CHAPTER TWENTY-FOUR

If you load the Triad Tool into the ToolBox and then double-click on it, Create-A-Tool shows the structure of the MacroTool. You can then open the Control window of each Transpose Tool to see its parameter settings.

As an example, you can edit the parameters to create a chord inversion by changing the second Transpose Tool from shifting up a fifth to down a fourth.

Making MacroTools Out Of MacroTools

Like any other Tool, you can place a MacroTool in any other MacroTool you build; however, you cannot place it inside itself. Nor can you place it within another MacroTool that is contained within it. The Create-A-Tool Editor makes sure this doesn't happen. If you drag a MacroTool into the definition of itself, it won't stay there.

Installing, Removing, Using, Altering, and Testing

Installing

Once you have created a MacroTool, you must save it to disk. If you fail to do so, the MacroTool will be deleted when you exit Bars&Pipes Professional.

To save a MacroTool, click once on the MacroTool in the ToolBox, then select the Save option from the ToolBox menu. Bars&Pipes Professional opens its file requester. Create a new file name for your Tool.

NOTE → If you use the name of an existing Tool, Bars&Pipes Professional overwrites the older Tool.

Bars&Pipes Professional saves your MacroTool to that file. From now on, when Bars&Pipes Professional runs, it automatically loads your MacroTool.

Removing

If you don't like what you've created, you can remove your MacroTool by clicking on it in the ToolBox and selecting the Remove option from the ToolBox menu. Bars&Pipes Professional removes the MacroTool from the ToolBox, removes all copies of it from your composition, and no longer loads this MacroTool. The MacroTool, however, is still on your disk; you can leave it there or delete it by using the Workbench or CLI (Command Line Interface.)

Using

Use your MacroTool just as you would a normal Tool. You can place it in a PipeLine to process notes in real-time, or in a ToolPad, to process notes in a section, or on a note-by-note basis.

Altering

You can always go back and edit your MacroTool. To do so, double-click on the MacroTool's icon in the ToolBox. The Create-A-Tool Window opens with your MacroTool, and you can edit it in any way you'd like. If you have already used this MacroTool, versions that are in use are not affected by editing the master. Once you are satisfied with the changes you have made, you must once again save the MacroTool to disk.

Testing

To audition a MacroTool before saving it to disk, drag the Test Tool at the bottom right of the Create-A-Tool window into a PipeLine in the Sequencer window. If you don't like the results, you can continue editing the MacroTool. The Test Tool automatically incorporates the changes, so that you can quickly edit, test, and re-edit until you're satisfied with the MacroTool.

CHAPTER TWENTY-FOUR

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Chapter 25

ToolTrays

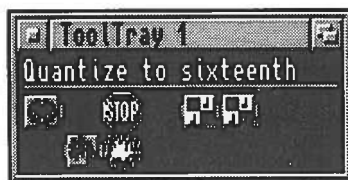
ToolTrays offer a convenient method for organizing your Tools. Bars&Pipes Professional includes eight ToolTrays, each of which can hold up to sixteen Tools. You can define a Tool's parameters by double-clicking on the Tool in the ToolTray, and give each instance of a Tool an original name.

Bars&Pipes Professional integrates ToolTrays into your Song. When you save a Song, Bars&Pipes Professional saves your ToolTrays along with it.

To set up a default environment with ToolTrays, select New from the Song menu, arrange your ToolTrays, and then select Save As Default from the Song menu. Please see the chapter, Customizing Your Environment, for more information.

The ToolTray Windows

Open a ToolTray from the ToolTray menu in the ToolBox or the Tool menu in the Main screen. Choose the menu option corresponding to the particular ToolTray that you'd like to open. By default, ToolTrays are named numerically, however, you can rename a ToolTray however you'd like.



The ToolTray window is divided into two areas by a horizontal grey line. Above the grey line is space for the names of Tools. Below the grey line is room for up to sixteen instances of Tools.

Placing A Tool In A ToolTray

To install a Tool in a ToolTray, grab a Tool from the ToolBox, PipeLine, or other ToolTray, and drag it to a space beneath the grey line. When you release the mouse button to drop the Tool into the ToolTray, the name of the Tool appears in the space above the grey line.

NOTE → By dropping a Tool into a ToolTray, you create a unique instance, or copy, of the Tool, just as you do when you drop a Tool into a PipeLine.

CHAPTER TWENTY-FIVE

Editing A Tool

If the Tool has a Control window, double-click on the Tool's icon to open it. Then edit the Tool's parameters as you desire. Once you've changed a Tool, the changes stay with the Tool when you copy it into a PipeLine, ToolPad, MacroTool, or another ToolTray.

Naming A Tool

Once you've edited a Tool, you can rename it for easy reference. Click once on the Tool to select it, then enter the new name above the gray line.

NOTE → When you click on a Tool in a PipeLine, the name of the Tool is displayed in the Title bar of the Tracks window. Even though you can rename Tools in the ToolTrays, Tools in the PipeLine are still displayed as their original names in the Tracks Title bar. This is because only the ToolTray knows about the names that you've given the instances of the Tools within it. The Tracks window has no access to this information.

Using The ToolTray Tools

You can work with ToolTrays as you do the ToolBox. Copy Tools from ToolTrays into PipeLines, MacroTools, and ToolPads by clicking and dragging them to their appropriate destination. Unlike Tools from the ToolBox, the Tool copies retain the settings that you provided in the ToolTray.

Copying Tools In ToolTrays

Copy a Tool by grabbing it and dropping it in an empty space in the ToolTray. This is similar to copying a Tool in a PipeLine by picking it up and dropping it in another PipeLine.

Because you can have several copies of Tools in ToolTrays, renaming Tools help you avoid confusion. For instance, you can have a ToolTray that you call "Quantize Tools." In this ToolTray, you might have one Quantize Tool that you call "Sixteenth Notes," that quantizes to sixteenth notes, and one called "Eight Notes" that quantizes to eight notes.

If you drag a Tool and place it on top of an existing Tool in the ToolTray, it replaces the Tool beneath it.

Loading ToolTrays

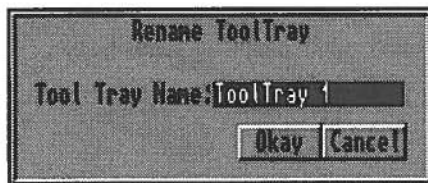
The Load ToolTray option in the ToolTray menu allows you to load in previously saved ToolTrays. If there are any Tools in the ToolTray that are not in the ToolBox, Bars&Pipes Professional automatically loads them into the ToolBox. If the Bars&Pipes Professional is unable to find a Tool, it asks you to load it manually.

Saving ToolTrays

The Save ToolTray command in the ToolTray menu allows you to save your ToolTrays to disk. The Load ToolTray command allows you to load ToolTrays from disk.

Renaming ToolTrays

The Rename ToolTray menu command in the ToolTray menu allows you to rename the ToolTray. When you select this option, a requester appears, displaying the ToolTray name.



Enter the new name and click okay. The new name displays not only in the ToolTray window, but in all menus that refer to the ToolTray as well, such as the menu options in the Main menu's Tool menu.

Loading Instances Of Tools Into ToolTrays

The Load Tool command in the ToolTray menu allows you to load a Tool into the ToolTray that was previously saved with the Save Tool command from a ToolTray. Each Tool loads with its parameters set to the values they had when it was saved.

Saving Instances Of Tools From ToolTrays

Use the Save Tool command in the ToolTray menu to save the Tool. Doing so saves the Tool, along with the parameters you've set.

Removing Tools From ToolTrays

Use the Remove Tool command to remove a Tool from a ToolTray. Do to so, activate the Tool by clicking on it, then select the Remove Tool command in the ToolTray menu.

If you drag a Tool from any source and drop it on a Tool in a ToolTray, it replaces the Tool beneath it, effectively removing that Tool.

CHAPTER TWENTY-FIVE

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Chapter 26

Overview

This chapter describes the musical Tools included with your Bars&Pipes Professional release disk.

As you may already know, Bars&Pipes Professional is an expandable music environment. As a result, you have the opportunity to add more Tools to your system. For more information on how to install and use Tools, please Chapter 7, Tools.

Format Of Tool Descriptions

Each Tool is described in a standard format:

DESCRIPTION: explains the Tool's function.

SPECIAL TYPE: identifies the Tool's special features, if any. Please keep in mind the following definitions:

- An Input Tool is the first Tool on the Input PipeLine.
- An Output Tool is the last Tool on the Output PipeLine.
- A Branching Tool can connect to a Merging Tool on another PipeLine.
- A Merging Tool can receive from a Branching Tool.
- A MacroTool consists of several Tools assembled with the Create-A-Tool feature.

USAGE: specifies the location, either the PipeLine or a ToolPad, in which a Tool can be used.

CONTROLS: describes the Tool's Control window, if the Tool has a Control window.

You can access the Tool's Control window by:

- Double-clicking on the Tool if it is in a PipeLine.
- Pressing a shift key and clicking on the Tool if it is in the ToolPad.
- Using the Edit PadTool Controls menu option if the Tool is in the ToolPad.

NOTE → You can edit the Tool's Controls while the Tool is processing notes.

Many Tools have pop-up buttons to choose octaves, notes from a keyboard, etc. To use these pop-up buttons, drag the mouse to the selection you want and release the mouse button.

CHAPTER TWENTY-SIX

In addition to the standard Tool descriptions, we've included many tips and examples to help you get the most out of using Tools.

About The Examples

The examples in this chapter presume the following:

- You have a MIDI keyboard available as an input device.
- The Tracks are set up as they would normally appear when first loading Bars&Pipes Professional.
- A multi-timbral sound module or keyboard is the output device, and can receive on more than one MIDI channel, with different timbres or sounds set up on each MIDI channel.

Tool Listings

The following section describes each Music Tool individually. Although some Tools are mentioned in other parts of the manual, this chapter contains find the most detailed information on a particular Music Tool.

Accompany B



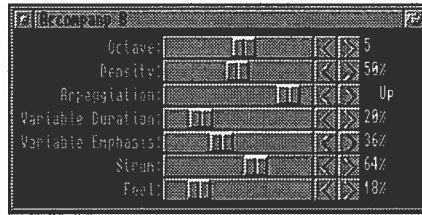
DESCRIPTION: The Accompany B Tool creates a rhythmic accompaniment by matching the Rhythm template and Chords in a Track's Song Parameters or a Song's Master Parameters. For each beat defined in the Rhythm, Accompany B generates a chord using the following information: the duration and accent of the beat, the voicing of the chosen chord, and additional parameters provided via its Control window. The Accompany B Tool always operates at the very beginning of a PipeLine, and then passes the created notes down the line to be processed by other Tools and recorded by the Sequencer.

- ★ TIP ★ Accompany B uses both the rhythmic and velocity information defined in the Rhythm template.

SPECIAL TYPE: Input.

USAGE: PipeLine.

CONTROLS: The Accompany B Tool features seven variable controls:



Octave

To select the octave in which the chord sounds, drag the slider to the right of the Octave: prompt.

Density

Drag the Density: slider to determine the "thickness" of the chord voicing. The Density ranges from one member note of the chord per beat to all member notes of the chord per beat.

Arpeggiation

To determine the order in which Accompany B plays the member note (either Down, Random, or Up) use the Arpeggiation: slider. The Arpeggiation selection is especially prominent when used in conjunction with the Density: and Strum: controls (please see below).

Variable Duration and Emphasis

Use the Variable Duration: and Variable Emphasis: sliders to determine the degrees of randomness which Accompany B uses in assigning the duration and velocity of each note. When the variation is 0, Accompany B uses the exact values from the Rhythm. When the variation is 100, Accompany B creates completely random values.

Strum and Feel

Use Strum: and Feel: to give the chords a guitar-like feel. Strum: determines how much of a delay to put between each note in a chord, while Feel: randomizes the timing of each note.

Example: Using Accompany B

1. *Put the Accompany B Tool in front of a Track.*
2. *Open the Track's Edit window.*
3. *Select the Chords menu option, and then the Rhythm menu option from the Show menu if they are not already showing.*
4. *Use the Pencil to enter a chord at measure one; then use the Pencil to enter a rhythm at measure one.*

CHAPTER TWENTY-SIX

5. *Close the Edit window or choose the Update option from the Edit menu to save the changes to the Tracks window.*
6. *Press Play from the Transport controls to hear the results.*

Alternator



The Alternator Tool switches notes back and forth between two Tracks. It passes the first note it receives through, then sends the second note down a branch to a Merge In Tool on the second Track, then passes the next note straight through, and so on.

SPECIAL TYPE: Branching.

USAGE: PipeLine.

Example: Alternating Two Tracks

1. *Put the Alternator Tool on the Output PipeLine of a Track you've previously recorded.*
2. *Now place the Merge In Tool on the Output PipeLine of another Track.*
3. *Connect the Alternator to the Merge In Tool.*
4. *Play back your sequence. Notice that every other note plays out the Alternator Track and then the Merge In Track.*
5. *Experiment. Try different instruments on the two Tracks. Open MixMaestro and set one Track's pan left and the other right.*

ARexx RealTime In



DESCRIPTION: The ARexx RealTime In Tool converts ARexx messages into MIDI events and feeds them into the PipeLine. If you are familiar with programming in ARexx, you can write compositional scripts that generate music. Or, if you are using other applications that transmit ARexx messages, send them to the ARexx RealTime In Tool to be converted into music.

Like Accompany B, the ARexx RealTime In Tool is an Input Tool. It sits at the start of the Track's PipeLine. Use it as an active ARexx port that receives ARexx messages from other applications and instantly converts them into MIDI events which it sends down the Track's PipeLine.

NOTE → Although similar, this Tool is not the same as ARexx In from MusicBox A.

The ARexx RealTime In Command Set

ARexx RealTime In utilizes eight commands to create specific MIDI Events at specific times. Each command starts with the specific MIDI event type, followed by an optional time parameter, and concluded with a set of numeric parameters pertaining to the MIDI event.

NOTE → If you don't understand the following command syntax, don't worry. We've provided concrete examples at the end of this Tool's description.

The command structure is the following, where items surrounded by brackets are optional, and a vertical slash (/) denotes an OR operation:

CMD [TIME [MBC mm.bb.cc | [SMPTE | HMSF] hh:mm:ss.ff | clocks]] parameters

Use the time portion of the command structure in one of five ways:

1. CMD parameters
(current time)
2. CMD TIME clocks parameters
(time in clocks)

NOTE → Bars&Pipes Professional measures time in 192 clocks per quarter note.

3. CMD TIME MBC mm.bb.ccc parameters
(time in measures,beats,clocks)
4. CMD TIME SMPTE hh:mm:ss.ff parameters
(time in SMPTE time)
5. CMD TIME HMSF hh:mm:ss.ff parameters
(time in SMPTE time)

CMD refers to any of the commands below, and parameters refer to the parameters listed after each command:

NOTE Noteval Velocity Duration

This creates a Note Event. "Noteval" is the note value, ranging from 0 to 127 on a chromatic scale. 60 is middle C. "Velocity" is the note velocity, also ranging from 0 to 127. "Duration" specifies in clocks how long the note plays before the ARexx RealTime In Tool sends a Note Off event.

NOTEON Noteval Velocity

This creates a Note On Event without a corresponding Note Off. The parameters are the same as for NOTE.

NOTEOFF Noteval

This creates a Note Off Event. "Noteval" is the note value.

CHAPTER TWENTY-SIX

PCHG Patch

This creates a Program Change event. "Patch" is the Program Change number, from 0 to 127.

PBND Bend

This creates a Pitch Bend event. "Bend," the pitch bend, is a value from -8192, for maximum pitch bend down, to 8191, for maximum pitch bend up.

CCHG Controller Value

This creates a Control Change event. "Controller," the controller number, indicates which of the 122 controllers to use. For example, controller #7 sets the volume of MIDI synthesizers, while controller #10 sets the pan. "Value" is the control data, ranging from 0 to 127.

MAFT Pressure

This creates a Mono After-Touch event. "Pressure" is the key pressure, ranging from 0 to 127.

PAFT Note Pressure

This creates a Poly After-Touch event. Slightly more sophisticated than Mono After-Touch, these events not only indicate the key pressure, but do so on a note by note basis. "Note" selects the note to which "Pressure" applies. The note value follows the same scale as the NOTE command, and the pressure is a number from 0 to 127.

ARexx Port

Each ARexx RealTime In Tool sets up its own ARexx port, using the name of the Track as its address. If you choose to send ARexx messages from another application or an ARexx program or shell, send them to the port defined by the Track's name.

Each time you press Stop, Start, or Play in the Transport Controls, the ARexx RealTime In Tool copies the Track name to its port name.

- ★ TIP ★ To change the ARexx RealTime In port name, open the Track Name requester by double-clicking on the Track name in the Tracks window, rename the Track, close the requester, and click once on the Stop button.

Before ARexx RealTime In can receive any messages, you must press Stop, Start, or Play in the Transport Controls.

SPECIAL TYPE: Input.

USAGE: PipeLine

CONTROLS: There is no Control window for the ARexx RealTime In Tool.

Questions And Answers:

Here are answers to questions you might have:

Question: What if I put too many parameters after a command?

Answer: Extraneous parameters are ignored.

Question: What happens if I use a command with a TIME parameter when the Sequencer isn't running?

Answer: The ARexx RealTime In Tool treats such commands as current time commands unless the Sequencer is running.

Question: What if the Sequencer is running, and I send a command to play a note at a time that is in the past?

Answer: ARexx RealTime In plays a shortened version of the note immediately at the time it receives the command to play. If recording, the note is recorded at the proper time and duration.

Question: What if I send an illegal value to a command?

Answer: ARexx RealTime In ignores illegal values.

Example: Playing Notes From The Shell

1. Place the ARexx RealTime In Tool on Track 4.
2. Launch a Shell from Workbench if necessary.
3. To play a 'C4' at the current time, type rx "ADDRESS 'Track 4' NOTE 60 60 60" at the Shell prompt. A note sounds.

NOTE → The address 'Track 4' is case sensitive. Neither 'Track 4' nor 'Track 4' works if the Track is called 'Track 4'.

4. Now, let's use ARexx RealTime In to play a note while Bars&Pipes Professional is playing.
5. To play a 'C4' at the beginning of measure 3 type rx "ADDRESS 'Track 4' NOTE TIME MBC '3.1.0' 60 60 60" at the Shell prompt. As soon as the Sequencer reaches measure 3, a note plays.

In the example above, we played single notes. However, using ARexx scripts, you can create algorithmic sequences to embellish your compositions.

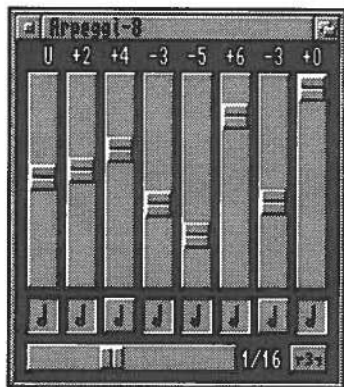
CHAPTER TWENTY-SIX

Arpeggi-8



DESCRIPTION: The Arpeggi-8 Tool creates a quick riff based on a set of eight predefined pitch transpositions. Use Arpeggi-8 to create strummed chords, sparkling fills, and unusual rhythmic embellishments.

USAGE: PipeLine, ToolPad.



CONTROLS: The following items are located in the Arpeggi-8 Control window:

Sliders

To set the eight pitch transpositions, drag the eight vertical sliders up or down with the mouse.

Each transposition slider has a range of one octave above and one octave below the received note. Because Arpeggi-8 always transposes within the specified key of the Song or Track, it gives you seven steps per octave.

By always transposing within the key, Arpeggi-8 guarantees that, as long as the entering note is within the key, the eight transpositions are also in key.

Note buttons

To determine which of the eight transpositions actually play, click on the note icons located under the sliders. For each activated note icon, Arpeggi-8 generates a note or a pause. Use the pattern of on and off note icons to create a rhythmic pattern.

Time interval buttons

Drag the horizontal slider to choose from intervals of 1/64 to whole notes. Use the triplet button to play triplet intervals.

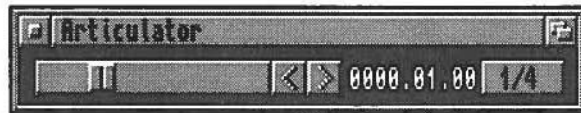
Articulator



DESCRIPTION: The Articulator Tool specifies the durations of all notes which pass through it.

USAGE: PipeLine, ToolPad

CONTROLS: To specify the preset duration, click on the slider to set the articulation in Measures, Beats, and Clocks. Or select a preset duration by clicking on the button and choose a note from the pop-up menu.



Example: Making All Notes 16th Notes

1. Put the Articulator in the ToolPad.
2. Select *Edit PadTool Controls* from the Tracks window's *Windows* menu, or, while holding a shift key, click on the Tool in the ToolPad.
3. Set the Articulator to 1/16 notes by using the pop-up menu.
4. Highlight the Track you want to transform.
5. Toolize the Track by selecting *Toolize* from the Track menu.

★ TIP ★ You can also achieve the same effect without permanently altering the lengths of the notes in the Track. To do so, place the Articulator on the Output PipeLine of a Track rather than Toolizing the Track.

Branch Out



DESCRIPTION: The Branch Out Tool sends a duplicate of each event that enters it down a connecting pipe to another PipeLine.

SPECIAL TYPE: Branching.

USAGE: PipeLine.

Example: Connecting Two Tracks

1. Put a Merge In Tool on the either the input or output side of Track 1.

CHAPTER TWENTY-SIX

2. Put a Branch Out Tool on the same side of Track 2.
3. The Branch Out Tool should be highlighted by a red square around it. If it isn't, highlight the Branch Out Tool by clicking on it.
4. Select Connect from the PipeTool menu, or use the Right Amiga - K keyboard shortcut.
5. Then click on the Merge In Tool. Now, the two Tracks are connected, thus all events flowing through Track 2 also flow into Track 1.

Chord Player

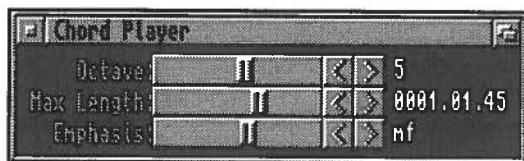


DESCRIPTION: The Chord Player performs the chords entered in the Song or Track Chord Parameters. If you place the Chord Player Tool anywhere in a PipeLine, it generates chords as your music plays.

The Chord Player is similar to the Accompany B Tool. However, the Chord Player can go anywhere on a PipeLine. Also, the Chord Player does not utilize the Rhythm information in the Song or Track Parameters. Instead, each time it finds an entered Chord, it plays the Chord once .

USAGE: PipeLine.

CONTROLS: The Chord Player Control window provides three sliders:



Octave

The Octave slider sets the base octave of the chords. Chord Player performs chords in the octave you choose.

Max Length

The Max Length slider sets the maximum duration of the chords. This ranges from one clock to two whole notes. If you place two chords in the Song or Track Parameters within the Max Length, Chord Player automatically shortens the first chord so that it ends just before the second begins.

Emphasis

The Emphasis slider sets the velocity (loudness) of each note in the chord. The range is 'ppp', for a very low velocity, to 'fff', for the highest velocity.

NOTE → The Chord Player Tool won't play any chords until you enter them into either the Master Parameters or the Individual Track's Song Parameters. Please see the Song Parameters chapter for more information.

CounterPoint

DESCRIPTION: Based on first species counterpoint, the CounterPoint Tool creates a counter melody to the notes that pass through it. The CounterPoint Tool uses the Key & Scale/Mode Track or Song Parameters to determine the proper note intervals.

NOTE → If you have not selected a Key & Scale/Mode, the CounterPoint Tool operates in the key of C Major.

If you connect the CounterPoint Tool to another PipeLine, it sends the counter melody to that PipeLine and pass the original melody through. If you don't connect it to another PipeLine, it passes the original melody and the counter melody through the same PipeLine.

SPECIAL TYPE: Branching.

USAGE: PipeLine, ToolPad

Example: Creating A Counter melody In F

1. *Open that Track's Edit window.*
2. *Using the Show menu, select Key and Scale/Mode.*
3. *Enter the key F Major with the Pencil.*
4. *Close the Edit window or select Update from the Edit menu.*
5. *Place the CounterPoint Tool in a Track's PipeLine.*
6. *Play a melody into the Track. Notice that the counter melody is using notes from the F Major scale.*

Delay

DESCRIPTION: The Delay Tool delays MIDI Events by a specified amount of time. Use it in one of two ways:

CHAPTER TWENTY-SIX

1. If you connect the Delay Tool to another PipeLine, it sends delayed copies of all MIDI Events to that PipeLine, while it passes the original Events, with their time unchanged, directly through.
2. If you don't connect the Delay Tool to another PipeLine, it delays the original events and passes only the delayed events down the PipeLine.

NOTE → Don't confuse the Delay Tool with the Echo Tool. The Echo Tool provides the sort of delay that most guitarists are used to, one that repeats over and over while fading away.

SPECIAL TYPE: Branching.

USAGE: PipeLine, ToolPad

CONTROLS: To set the Delay time, edit the number after the Delay: prompt. Enter the time in Measures, Beats, and Clocks.



Doctor of Velocity



DESCRIPTION: The Doctor of Velocity specifies the velocities of all notes to a preset value.

USAGE: PipeLine, ToolPad

CONTROLS: Drag the Velocity: slider to specify the velocity.



The slider displays both the MIDI velocity number and its equivalent musical notation. The velocity ranges from 0, or ppp, to 127, or fff.

Easy Off



DESCRIPTION: The Easy Off Tool filters out the All Notes Off Control Change message (Control Change #123). There are two primary uses for it:

1. Bars&Pipes Professional sends out Control Change #123 each time the Sequencer stops running. If you place this Tool in the Output PipeLine, it removes the All Notes Off commands.
2. Some keyboards send All Notes Off after the last note of a chord is released. This can cause trouble when multi-track recording if two Tracks share the same MIDI channel. An All Notes Off command might occur in one Track during the middle of a note in another Track, Clipping the note off immediately. Place Easy Off Tools in each Track's Input PipeLine when recording to remove these events.

USAGE: PipeLine and ToolPad

CONTROLS: There is no Control window. Place the Easy Off Tool in the Output PipeLine of each Track to prevent playing All Notes Off, or in the Input PipeLine to prevent recording All Notes Off.

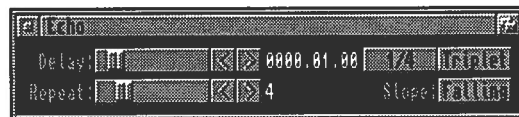
Echo



DESCRIPTION: The Echo Tool echoes notes. The echo can increase, decrease, or maintain the current volume level.

USAGE: PipeLine, ToolPad.

CONTROLS: Enter the interval between each echoed note after the Delay: slider in Measures, Beats, and Clocks. Alternatively, you can use the note duration pop-up button and the Triplet button to the right of the Delay: slider to set the delay.



The Repeat: slider sets the number of echoes the Tool creates, from 0 to 19. The Slope: button sets whether the echo volume is Rising, Falling, or Level. Click on this button to cycle through these choices.

- ★ **TIP** ★ Create a slapback bass effect by setting the Echo Tool to repeat once, with a decrease in volume level. Flesh out drum fills with multiple echoes. Or, use the Echo Tool in an Edit window to selectively echo notes at the end of a phrase.

CHAPTER TWENTY-SIX

Elbow



DESCRIPTION: The Elbow Tool sends all events that enter it to another PipeLine.

SPECIAL TYPE: Branching.

USAGE: PipeLine.

NOTE → The Elbow is basically the same as the Branch Out Tool, except that it does not pass notes through itself down its own PipeLine.

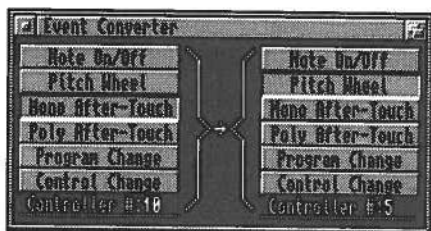
Event Converter



DESCRIPTION: The Event Converter translates one type of MIDI event into another.

USAGE: PipeLine, ToolPad

CONTROLS: The Event Converter's Control window consists of two rows of MIDI Event buttons. To select the source event, click on the appropriate button in the left-hand row. To select the destination event, click on the desired button in the right hand row.



NOTE → If you select Control Change as your source and/or destination, you must enter a Controller number after the Controller #: prompt. This number must be a value from 0 to 127.

DETAILS: Here is what happens in each type of conversion:

MIDI Note Offs are ignored.

Note On -> Pitch Wheel: Pitch Bend value = (Note value * 128) - 8192, so MIDI Note 64 is Pitch Bend 0.

Note On -> Mono After-Touch: After-Touch value = Note value.

Note On -> Poly After-Touch: Note value = Note value, After-Touch value = Note velocity.

Note On -> Program Change: Patch number = Note value.

Note On -> Control Change: Control change data = Note value.

Pitch Wheel -> Note On: Note value = (Pitch Bend value + 8192) / 128. Note velocity = 96. Note duration = 96.

Pitch Wheel -> Mono After-Touch: After-Touch value = (Pitch Bend value + 8192) / 128.

Pitch Wheel -> Poly After-Touch: Note value = last Note On value received or 60 if no previous note. After-Touch value = (Pitch Bend value + 8192) / 128.

Pitch Wheel -> Program Change: Patch number = (Pitch Bend value + 8192) / 128.

Pitch Wheel -> Control Change: Control change data = (Pitch Bend value + 8192) / 128.

Mono After-Touch -> Note On: Note value = After-Touch value. Note velocity = 96. Note duration = 96.

Mono After-Touch -> Pitch Wheel: Pitch Bend value = (128 * After-Touch value) + 8192

Mono After-Touch -> Poly After-Touch: Note value = value of last note received. After-Touch value = After-Touch value.

Mono After-Touch -> Program Change: Patch number = After-Touch value.

Mono After-Touch -> Control Change: Control change data = After-Touch value.

Poly After-Touch -> whatever: Same as Mono After-Touch. Please see above.

Program Change -> Note On: Note value = Patch number. Note velocity = 96. Note duration = 96.

Program Change -> Pitch Wheel: Pitch Bend value = (128 * Patch number) + 8192.

Program Change -> Mono After-Touch: After-Touch value = Patch number.

Program Change -> Poly After-Touch: Same as Mono. Note value = last Note value received.

Program Change -> Control Change: Control change data = Patch number.

Control Change -> Note On: Note value = Control change data. Note velocity = 96. Note duration = 96.

CHAPTER TWENTY-SIX

Control Change -> Pitch Wheel: Pitch Bend value = (128 * Control change data) + 8192

Control Change -> Mono After-Touch: After-Touch value = Control change data.

Control Change -> Poly After-Touch: Same as Mono. Note value = last Note value received.

Control Change -> Program Change: Patch number = Control change data.

Control Change -> Control Change: Control change data = Control change data.

Example: Pitch Bend To Control Change #7

1. Choose Pitch Wheel on the left and Control Change on the right.
2. Set the Controller # on the right to #7.

Now, an increase in keyboard key pressure results in an increase in volume.

Event Filter

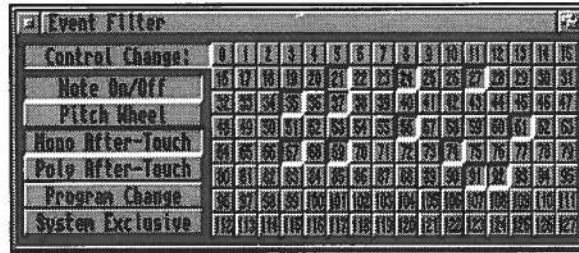


DESCRIPTION: The Event Filter Tool allows only specified MIDI Event types to pass through. Use it to filter undesired events from a Track or PipeLine. Because the Event Filter is also a Branching Tool, it can send filtered notes to another Track.

SPECIAL TYPE: Branching

USAGE: PipeLine, ToolPad

CONTROLS: Highlighted events in the Event Filter's Control window are filtered, and not allowed to pass through the Event Filter. Highlight the events you want to filter out by clicking on the appropriate button. Event types that are selected are removed or, if you have connected the Event Filter to another PipeLine, sent to that PipeLine.



Use the number grid on the right side of the Control window in conjunction with the Control Change button to filter specific control changes. In order for any Control Change events to be filtered, the Control Change button must be selected, in addition to the specific numbers in the grid. Two menu options are provided to set and clear all control change values.

Event Scrubber



DESCRIPTION: The Event Scrubber removes redundant MIDI Events. For example, if a succession of Pitch Bend Events contain the same value, Event Scrubber removes all but the first since the following Events do nothing to change the Pitch Bend value.

By removing redundant Events, Event Scrubber frees up memory and processing overhead, when used from the ToolPad.

USAGE: PipeLine, ToolPad.

FeedBack In



DESCRIPTION: In conjunction with the FeedBack Out Tool, the FeedBack In Tool passes events on the Output PipeLine of one Track to the Input PipeLine of another. Place FeedBack Out on the Output PipeLine of the sending Track and place FeedBack In on the Input PipeLine of the receiving Track.

NOTE → Using the FeedBack Tools could create a 'feedback loop' in which notes race through the PipeLine, repeatedly, in a circular path. When this happens, Bars&Pipes Professional's user-interface momentarily freezes and none of the buttons respond. After a few seconds, it senses a feedback loop and clears the PipeLines and stops the Transport.

SPECIAL TYPE: Input.

USAGE: PipeLine.

CHAPTER TWENTY-SIX

CONTROLS: Click on the gray box at the beginning of the Track, in front of the FeedBack In Tool, to activate the FeedBack In Tool. The Input arrow appears in the gray box, and stays there until either the FeedBack In Tool is removed, or until you select the Input arrow for a different FeedBack In Tool.

FeedBack Out



DESCRIPTION: Placed at the end of the Output PipeLine, the FeedBack Out Tool sends events to a FeedBack In Tool on the Input PipeLine of another Track.

Use the combination of the FeedBack Out and FeedBack In Tools to record one Track's performance into another. This doesn't just duplicate the first Track because it captures the performance of the Tools in the first Track's Output PipeLine and second Track's Input PipeLine.

NOTE → Please see the FeedBack In Tool for more information.

SPECIAL TYPE: Output.

USAGE: PipeLine.

Example: Creating A Feedback Loop

1. Put a FeedBack Out Tool at the end of Track 1.
2. Put FeedBack In Tools at the beginning of Tracks 2, 3, and 4.
3. Click Track 1 and Track 2's Input arrows. The Input arrow displays on both Tracks because each Track has a different type of Input Tool.
4. Play your keyboard. Notice that sound is traveling down Track 1, feeding back to Track 2, and playing through Track 2's selected MIDI channel.
5. Alternately, click on Track 3's Input arrow. Now you should hear MIDI playing out of Track 3's MIDI channel. Try the same thing with Track 4.

Flip



DESCRIPTION: The Flip Tool flips all notes around a center note, or axis. It measures the interval between each note and the axis, and computes a mirror image of the note on the flip side of the axis. If you've set the Key & Scale/Mode in the Track or Song Parameters, it computes an interval in key.

USAGE: PipeLine, ToolPad.

CONTROLS: To edit the center note, use the two buttons after the Axis: prompt to set the Note and Octave respectively.



★ TIP ★ For new ideas, use this Tool on the Output PipeLine. Give your favorite melodies a new life.

General MIDI



DESCRIPTION: The General MIDI Tool provides an easy way to set up patches for General MIDI compliant sound modules, including the One-Stop Music Shop from Blue Ribbon.

NOTE → Owners of the Roland SoundCanvas should use the SoundCanvas Tool instead.

USAGE: PipeLine.

CONTROLS: Use the Control window to select a patch from the complete General MIDI patch list and optionally install it in a Track.



The following features are available:

Patch

Drag the slider after the Patch: prompt to change the Patch number.

Automatic

When the Automatic button is highlighted red, the General MIDI Tool outputs the selected Patch change whenever Start or Play is pressed in the Transport. If the Automatic button is off, the General MIDI Tool does nothing.

CHAPTER TWENTY-SIX

Install

The Install button places the Patch change command in the Track at the current Song Position. Use this function in lieu of the Automatic feature, especially if you intend to install patch changes at different points in the Track.

Test

The Test button sends out an arpeggio on the MIDI line so that you can hear the Patch.

Groove Quantize



DESCRIPTION: The Groove Quantize Tool quantizes notes to a user-defined rhythm. You may define the rhythm in one of two ways:

1. Use a Clip from the ClipBoard. Create a section of notes that define a specific type of Rhythm, paste the section to the ClipBoard, then pull the Clip into the Tool. The Clip belongs to the Tool, so you may copy it into multiple Tracks and save it separately. The Tool always quantizes to the same groove.
2. Use the user defined Rhythm in the Song Parameters. Enter one or more rhythms into the rhythm section of the Track or Master Parameters. The Groove Quantize Tool applies the rhythm to the notes passing through it, faithfully following the Rhythm changes. However, the Tool does not carry the groove with it. If you switch it to a different Track, it Quantizes to that Track's rhythm.

NOTE → A rhythm in the Master Parameters applies to all Tracks, whereas a rhythm in a Track's parameters only affects the one Track, but it takes precedence over the Master Parameter rhythm.

USAGE: PipeLine, ToolPad.

CONTROLS: Before using the Groove Tool, you must prepare a rhythm to use as the quantization source.

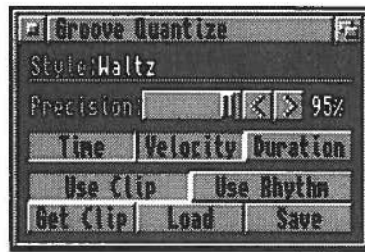
If you plan to quantize to a Clip, use the ClipBoard in conjunction with the Get Clip button to prepare the Tool. To do so, open the ClipBoard and cut or copy the Track you would like to use as the quantize template.

NOTE → Remember to select the Solo button before choosing the Cut or Copy command from the Edit menu.

The Clip in the ClipBoard should be an 'S' Clip, which stands for 'single Track Clip'. With the Clip highlighted in the ClipBoard, push the Get Clip button to import the Clip into the Groove Quantize Tool. The name of the

Clip is displayed after the Style: prompt. You can modify this name as you see fit.

If you plan to quantize to Rhythm parameters, set up the Rhythm parameters in the Track's Song Parameters. You can place several different Rhythms at different times. Use the Define Rhythm window to design new Rhythms.



Style

To remember which Clip you've placed in the Tool, name the Groove by typing after the Style: prompt. For example, if you load a Clip with a Reggae rhythm, enter Reggae. When you use a Groove Quantize Tool at a later date, this helps remember the nature of the quantization.

Precision

The Precision Slider controls how precisely the Groove Quantize Tool quantizes notes. Set the slider to 100% to quantize notes to the exact values of the notes in the groove. Set the slider to 50% to move the notes exactly half way towards the groove rhythm. Set the slider to 0% and the Groove Quantize Tool does nothing.

Time

When the Time button is active, the Groove Quantize Tool quantizes the start times of notes to be the same as the start times of notes in the groove.

Velocity

When the Velocity button is active, the Tool quantizes the velocities of notes to be the same as the velocities of notes in the groove.

Duration

When the Duration button is active, the Tool quantizes the duration of notes to be the same duration as the notes in the groove. If the Duration button is not active, it leaves the duration of the notes untouched.

CHAPTER TWENTY-SIX

Use Clip

The Use Clip button tells the Groove Quantize Tool to use a Clip from the ClipBoard as the rhythm source. Otherwise, it uses the Rhythm in the Song Parameters.

Use Rhythm Parameters

Select the Use Rhythm Parameters button to tell the Groove Quantize Tool to use the Rhythm in the Track or Global Song Parameters.

Get Clip

The Get Clip button grabs the currently selected Clip in the ClipBoard to use as a groove. The Clip in the ClipBoard must be a single Track only, denoted by a capital 'S'. The Clip can be of any length. The Groove Quantize Tool treats the Clip as a looped rhythm, beginning at measure one.

Load

Use the Load button to load in previously saved grooves.

Save

Use the Save button to save grooves for later use.

Harmony Generator



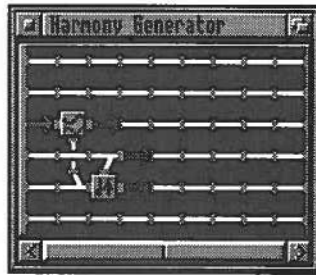
DESCRIPTION: The Harmony Generator creates two harmony notes for every note it processes. This Tool is actually a MacroTool consisting of a CounterPoint Tool, which creates the first harmony, in parallel with a Transpose Tool, which creates the second harmony. The Harmony Generator is a great example of how you can easily create your own MacroTools to produce weird and wonderful musical effects.

NOTE → Set the Key & Scale/Mode in the Track or Song Parameters for the best effect.

SPECIAL TYPE: MacroTool.

USAGE: PipeLine, ToolPad.

CONTROLS: Double-click on the Harmony Generator Tool in a PipeLine, or if it is in the ToolPad, choose Edit PadTool Controls from the Windows menu to access the MacroTool's Control window.



Double-click on the Transpose Tool in the Harmony Generator's MacroTool window to change the second harmony. The CounterPoint Tool has no Control window.

COMPONENTS: CounterPoint, Transpose, Merge In

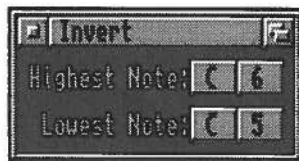
Inverter



DESCRIPTION: The Inverter Tool squeezes all notes into a preset range, shifting notes that are too low or high.

USAGE: PipeLine, ToolPad.

CONTROLS: To edit the preset range, set the highest note and lowest note after the Highest Note: and Lowest Note prompts. Set the octave and note parameters separately by clicking on each and selecting from the pop-up menu.



The Inverter Tool transposes notes outside of its range by enough octaves to put them inside its range. For example, if the range is C4 to F5, it moves an E6 down to an E4, a C3 up to a C4, and leaves a D4 at D4.

NOTE → The lowest note is inclusive, the highest note is not inclusive. In the above example, a C4 would stay a C4 while an F5 would turn into an F4.

For the best results, the lowest note should be at least one octave below the highest note.

CHAPTER TWENTY-SIX

- ★ TIP ★ Use after a Triad Tool or the Accompany B Tool to create a chord leading effect or to limit melodic sequences that are going to low or high: perhaps getting out of bounds of your sound module.

Key Filter



DESCRIPTION: The Key Filter permits only notes within the defined Key & Scale/Mode of the Track to pass through. (By default, the key is C Major.) For example, if your Song is in the key of D Natural Minor, the Key Filter Tool only allows the notes D, E, F, G, A, Bb, and C to pass through. If the Key Filter is connected to another Track, it branches filtered notes to the second Track. Otherwise, it throws the filtered notes away.

USAGE: PipeLine, ToolPad.

CONTROLS: Key Filter has no Control window. Make sure to set the Key & Scale/Mode before using Key Filter, or it automatically assumes the key of C Major.

Keyboard Splitter

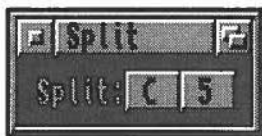


DESCRIPTION: The Keyboard Splitter passes all notes at or above a preset point down the PipeLine. It diverts all notes below that point to another PipeLine, if connected.

SPECIAL TYPE: Branching.

USAGE: PipeLine.

CONTROLS: To edit the split point's note value and octave, use the two pop-up buttons after the Split: prompt.



- ★ TIP ★ Use this Tool to pass notes on and above a key on your keyboard to one MIDI channel, and notes below that key to another.

Example: Splitting Your Keyboard

1. Set up Track 1, MIDI channel 1 with a Bass patch and Track 2, MIDI channel 2 with a Guitar patch.

★ TIP ★ You can use the Quick Patch Tool to do this easily.

2. *Put the Keyboard Splitter Tool on the Output PipeLine of Track 2, the Guitar Track.*
3. *Drag a Merge In Tool on the Output PipeLine of Track 1.*
4. *Click on the Keyboard Splitter Tool, and select Connect from the PipeTool menu.*
5. *Click on the Merge In Tool in Track 1.*
6. *Set the split point on the Keyboard Splitter to C3.*
7. *Click on Track 2's Input arrow and play a few notes on your keyboard. When you play your keyboard, all notes on and above C3 will play Guitar, while all notes below C3 will play Bass.*

Legato



DESCRIPTION: The Legato Tool forces only one note at a time to be played. If a note is still playing when a second note starts, the first note cuts off immediately.

USAGE: PipeLine, ToolPad.

CONTROLS: The Legato Tool has no Control window.

Loop

DESCRIPTION: The Loop Tool records and plays a looped section of music.

NOTE → The new Pattern Tool does almost everything that the Loop Tool does, and more. The Pattern Tool's only limitations are it loops only MIDI note events and always sets the loop length to measure boundaries. Use the ClipBoard to transfer Loop Tool sections between the Pattern and Loop Tools.



When recording, the Loop Tool layers new notes on top of previously recorded notes. For playback, the Loop Tool provides three modes:

Free Run mode

In Free Run Mode, the looped section starts playing at a predefined start point, and repeats a user-selected number of times.

Riff Mode

In Riff mode, an incoming note triggers the looped section to play immediately. If multiple overlapping notes enter, the Loop Tool plays

CHAPTER TWENTY-SIX

multiple overlapping copies of the looped section. This comes in handy with the Transpose and Modulate options. (Please see below.)

Trigger Mode

In Trigger mode, a specific incoming note triggers the looped section to play immediately. The Tool ignores all other notes.

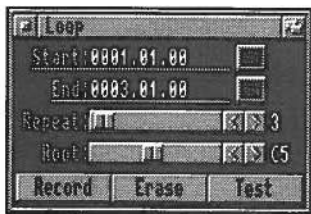
The Loop Tool provides two options for shifting the pitch of playback under user control:

1. The Transpose option shifts the looped section up or down in key. The Loop Tool determines the transposition by measuring the distance between a user-specified root note and the entering note. For example, if the root note is set at C5 and then C6 enters, the Loop Tool plays the sequence transposed up one octave. It shifts each note in key, abiding by the user-specified Key & Scale/Mode in the Track or Song Parameters.
2. The Modulate option shifts the looped section up or down a constant distance determined by the difference between the note entering the Tool and the user-specified root note. The Modulate option ignores the user-specified Key & Scale/Mode.

When combined with the three playback modes, the Transpose and Modulate options provide a rich set of options for real-time performance and composition.

USAGE: PipeLine.

CONTROLS:



Start: and End

Set the Enter the beginning and ending times for the loop in the Start: and End: fields. Alternatively, drag the Loop Flags in the Tracks window to the desired loop begin and end locations, then click on the loop buttons to the right of the Start: and End: fields. These buttons set the Start: and End: fields to the values of the Loop Flags. The Loop Flags have no other effect on this Tool.

Repeat

The Repeat: slider determines how many times the Tool plays its loop. Select Inf (loop forever), or 1 through 99.

Root

The Root: slider selects the root note for the Transposition and Modulate options as well as the trigger note for Trigger mode.

Record

The Record button places the Loop Tool in Record mode. Click on it, then select Start in the Transport Controls. The looped section plays as if in Free-Run mode. Add to the looped section by playing along. The Loop Tool merges the new notes into the looped section.

Erase

To erase individual notes while recording, click on the Erase button, then play the notes you want to erase, holding them down long enough to overlap with the originals. Turn off Erase by clicking again. The erased notes stop playing.

Test

To listen to the looped section without running the Transport Controls, click on the Test button.

The Loop menu provides commands for erasing, storing, and retrieving loops.

Clear

Clear erases the loop.

Load

Load retrieves a previously saved loop from disk.

Save

Save opens the file requester and saves the loop to disk.

Paste from ClipBoard

Paste from ClipBoard replaces the notes in the loop with the currently selected Clip in the ClipBoard.

Copy to ClipBoard

This copies the looped section into a new Clip and places that in the ClipBoard. .

CHAPTER TWENTY-SIX

Paste from Track

This replaces the notes in the Loop Tool with the section of notes between the Start: and End: times in the Track. It also erases the same section in the Track so that the Loop Tool and Sequencer don't overlap during playback.

Copy to Track

This copies the looped section from the Loop Tool into the Track, placing it between the Start: and End: times.

- ★ TIP ★ To edit a loop, select *Copy to Track*, then use the *Graphic Editor* to alter the loop to your liking. When done, use *Paste from Track* to return the loop to the Tool.

The Performance menu determines the behavior of the Loop Tool's performance. The following commands are found in the Performance menu:

Free Run

The default selection, *Free Run*, plays the loop, starting when playback reaches the Start: time and playing as many times as specified in the Repeat: slider. In addition, if either *Transpose* or *Modulate* is selected, it Tracks new notes that enter the Loop Tool and shifts the melody up and down as it plays.

Trigger

With *Trigger* selected, the Loop Tool plays the looped section immediately when it receives the note specified in the Root: slider.

Riff

With *Riff* selected, the Loop Tool plays the looped section every time it receives a new note. If *Modulate* or *Transpose* are selected, the Loop Tool plays the sequence shifted up or down by the distance between the new note and the root note (set with the Root: slider).

Transpose

With *Transpose* selected, the Loop Tool shifts the looped section up or down the transposition defined by the interval between the reference note and the root note. Once again, this applies to *Free Run* and *Riff* modes, but not *Trigger* mode.

Modulate

With *Modulate* selected, the Loop Tool shifts the playback pitch up or down the exact distance between the reference note and the root note. Once again, this applies to *Free Run* and *Riff* modes, but not *Trigger* mode.

Merge In



DESCRIPTION: Use the Merge In Tool in conjunction with all branching Tools to connect PipeLines vertically.

SPECIAL TYPE: Merge.

USAGE: PipeLine.

NOTE → Please see the Branch In Tool's example for more details on using Merge In.

MIDI In

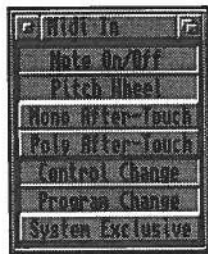


DESCRIPTION: The MIDI In Tool receives MIDI events entering the Amiga's serial port and passes them down the PipeLine.

SPECIAL TYPE: Input.

USAGE: PipeLine.

CONTROLS: To determine which MIDI Events enter the PipeLine, select the appropriate MIDI Event buttons. Highlighted buttons are active. Non-highlighted events do not enter the PipeLine. By default, all buttons except the System Exclusive button are active.



★ **TIP** ★ To save memory, avoid highlighting MIDI events for which you have no purpose. For instance, if you will not be recording Control Change events, unhighlight the Control Change buttons.

Additionally, when the System Exclusive button is highlighted, the MIDI In Tool sets aside a memory buffer for System Exclusive events. The System Exclusive capability of the MIDI In Tool is designed for the real-time recording of System Exclusive events which do not require handshaking. Simply record the System Exclusive information in a Track as you would any other MIDI data.

CHAPTER TWENTY-SIX

★ TIP ★ If you frequently work with your MIDI equipment's System Exclusive data, consider The PatchMaster Universal MIDI Patch Librarian.

MIDI Out

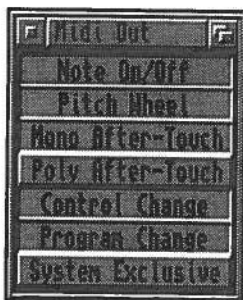


DESCRIPTION: The MIDI Out Tool transmits MIDI events through the Amiga's serial port.

SPECIAL TYPE: Output.

USAGE: PipeLine.

CONTROLS: To determine which MIDI Events exit the PipeLine, toggle on or off the MIDI Event buttons. By default, all events except System Exclusive are active.



NOTE → Remember to activate the System Exclusive button whenever you want to send System Exclusive events through the MIDI Out Tool.

Modulator

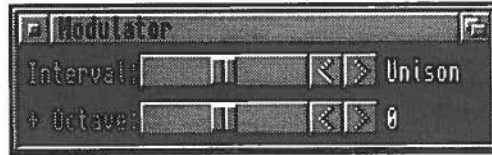


DESCRIPTION: The Modulator Tool shifts all notes up or down in pitch by a specified amount. This feature is useful for shifting music from one key to another, as well as for bumping notes up or down octaves. The Modulator Tool differs from the Transpose Tool in that it does not force the notes to stay in key when it shifts them. Instead, the shift is purely linear. All note-to-note relationships are kept the same.

USAGE: PipeLine, ToolPad.

CONTROLS: To determine the note shift, specify the interval and octave. The former, Interval:, specifies the modulation distance within the octave. The range extends down a major seventh and up a major seventh. If you want a modulation which is greater or equal to an octave, use the second

slider, Octave Shift, to determine, in addition to the interval, the number of octaves up or down.



Example: Changing The Key From C To Eb

1. *Put the Modulator Tool in the ToolPad.*
2. *Hold down a shift key while clicking on the ToolPad to open the Modulator Tool's Control window. Or, choose the menu option Edit PadTool Controls.*
3. *Eb is a minor 3rd above C. Set the Interval: slider to >m3rd.*
4. *Close the Control window.*
5. *Set the Left and Right Edit Flags at the beginning and ending of your Song.*
6. *Choose Toolize from the Edit window. The key of your Song is now in Eb major.*

Note Filter



DESCRIPTION: The Note Filter Tool allows only notes within a preset range to pass through. A MacroTool, it combines two Keyboard Splitter Tools and two Merge In Tools to build a note filter.

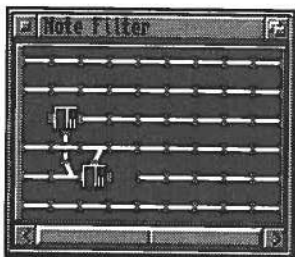
NOTE → The Pro Studio Kit includes a straight Note Filter Tool.

SPECIAL TYPE: MacroTool.

USAGE: PipeLine, ToolPad.

CONTROLS: The Note Filter Tool is a MacroTool which consists of two Keyboard Splitter Tools and two Merge In Tools. The first (top) Keyboard Splitter Tool specifies the upper limit. It sends notes below the split point to another PipeLine. The second (bottom) Keyboard Splitter Tool determines the lower limit, and passes notes at or above that split point to the output of the MacroTool.

CHAPTER TWENTY-SIX



To edit either limit, double-click on its Keyboard Splitter icon and edit it as you would for the Keyboard Splitter Tool.

Example: Filter All Notes But C4

1. Put the Note Filter on the Output PipeLine of a Track.
2. Double-click on the Note Filter.
3. Double-click on the top Keyboard Splitter in the Note Filter's Control window.
4. Set the Keyboard Splitter to the note C#4. All notes below C#4 will be sent to the next Keyboard Splitter.
5. Double-click on the bottom Keyboard Splitter.
6. Set this Keyboard Splitter to the note C4. All notes on and above C4 will be sent out of the MacroTool. Since all but C4 have been removed by the previous Keyboard Splitter, only C4 remains.

★ TIP ★ Use the Note Filter to separate drum Tracks with several drums. Make several copies of the original drum Track, and filter out all but the single drum sound you want in each copied Track.

NotePad



DESCRIPTION: The NotePad Tool is a simple text editor that allows you to attach reference notes to a PipeLine or ToolPad. Within the Tool's Control window, you can type as much as you want.

USAGE: PipeLine, ToolPad.

CONTROLS: The NotePad's Control window allows you to enter text and use the standard arrow keys on your keyboard and mouse movements to make changes.

NOTE → You cannot import or export your notes.



Pattern



DESCRIPTION: Please see Chapter 27, The Pattern Tool, for more information on this Tool.

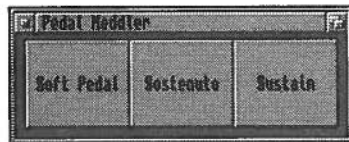
Pedal Meddler



DESCRIPTION: The Pedal Meddler simulates the function of the standard three piano pedals: soft pedal, sostenuto, and sustain.

USAGE: PipeLine.

CONTROLS: There are three buttons in the Pedal Meddler Tool: Soft Pedal, Sostenuto, and Sustain. Activating each button sends out a control change event.



Soft Pedal

Soft Pedal sends out Control Change #67 with a data byte of 127 when activated, and a data byte of 0 when deactivated.

Sostenuto

Sostenuto sends out Control Change #66 with a data byte of 127 when activated, and a data byte of 0 when deactivated.

Sustain

Sustain sends out Control Change #64 with a data byte of 127 when activated, and a data byte of 0 when deactivated.

CHAPTER TWENTY-SIX

If you stop the Sequencer while playing or recording, all buttons deactivate themselves, sending out the appropriate Control Changes.

Phrase Shaper



DESCRIPTION: Applying the Dynamics curve in the Track or Song Parameters to each note, the Phrase Shaper Tool sets the note velocity appropriately.

USAGE: PipeLine, ToolPad.

CONTROLS: Create a Dynamics curve in a Track's Edit window or Master Parameters. The Phrase Shaper Tool sets the note velocity of any note going through it to the Dynamics curve value at the Note's time.

Plug



DESCRIPTION: The Plug Tool throws away everything entering the Plug. Place a Plug in the Input PipeLine to discard anything entering this pipe. Place a Plug in the Output PipeLine to mute the Track permanently. Plugs are also useful for use with Branching Tools, when you only want one of the two outputs.

USAGE: PipeLine.

Quantize



DESCRIPTION: The Quantize Tool conforms the timing of notes to a preset resolution. This Tool shifts notes to the closest note boundary ranging from a 1/64 note to a whole note, with or without a triplet modifier. Use this Tool to tighten up parts that you haven't entered with rhythmic accuracy.

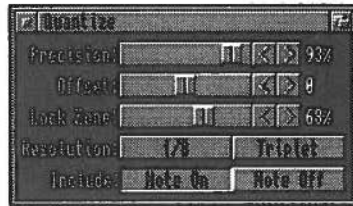
Aside from tightening the rhythm section of your Song, many other uses for the Quantize Tool exist. Different styles of music dictate different "feels." Notes quantized directly on the beat are said to be "in the groove" or "in the pocket." Notes quantized before or ahead of the beat tend to anticipate or "push the beat," and can add tension to your Song. Finally, notes quantized after or behind the beat tend to add a "laid back" or relaxed feel to your Song. The Quantize Tool allows you to quantize notes in any of the above ways, or anywhere in between.

You can quantize notes either while you are recording them, by placing the Quantize Tool on the Input PipeLine, or after recording is completed,

sometimes called "Auto-Correct" by placing the Quantize Tool on the Output PipeLine or by "Toolizing" your Song with this Tool.

USAGE: PipeLine, ToolPad.

CONTROLS: The following parameters are available in the Quantize Tool:



Resolution

The Resolution buttons determines to which note boundary Quantize shifts your notes. Select the note value, and Triplet modifier, if desired, after the Resolution: prompt.

Precision

Precision determines the effectiveness of the Quantize Tool, or how close to the note boundary you want your notes to shift. Drag the slider to change the value from 0% to 100%. 0% sets Quantize to do nothing, while 100% sets Quantize to reposition notes to exact multiples of the resolution. Depending on how sloppy the source material is, you might find resolutions between 60% and 90% work well.

Offset

The Offset slider determines whether the quantization should be ahead of, behind, or right on the beat. Drag the slider to change the offset value from -50 to +50 clocks. A negative offset moves notes ahead of the beat, while a positive offset moves them behind the beat. A zero offset quantizes directly on the beat.

Lock Zone

Lock Zone determines the area around the resolution value that the Quantize Tool affects. The Quantize Tool ignores notes outside the Lock Zone. Drag the slider to change the value from 0% to 100%. Usually leave it at its default setting of 100%, to quantize all notes. A medium Lock Zone quantizes only the notes close to the beat, ignoring the rest. At a Lock Zone of 0%, the Quantize Tool ignores all notes.

- ★ **TIP** ★ If you set the Lock Zone slider to 50%, and quantize to an eighth note resolution, then the Quantize Tool only quantizes notes within a sixteenth note or closer to each eighth note boundary.

CHAPTER TWENTY-SIX

Include

The Include buttons determine whether the Quantize Tool quantizes Note On, Note Off, or both of these events. Click on either button to toggle them on or off.

If only the Note On button is active, the Quantize Tool treats events differently in the ToolPad than in the PipeLine. In the ToolPad, the Quantize Tool shifts the Note Off the same distance it shifts the Note On, retaining the original note duration. In the PipeLine, only the Note On is quantized. This can result in a changed note duration.

If you select Note Off only, then the ending time of the note shifts to the Note Resolution boundary, and the starting time remains in place.

If you select both Note On and Note Off, the starting time and ending times of the note are shifted to the closest note boundaries.

NOTE → Warning: It's possible to quantize a Note On so that it occurs at the same time, or even after the Note Off. This results in either a note of zero duration or a stuck note. Be careful when quantizing very short notes to a large resolution.

Example: Quantizing A Track To 1/8 Notes

1. Put the Quantize Tool in the ToolPad.
 2. Select Edit PadTool Controls from the Tracks window's Windows menu, or hold down a shift key while clicking on the ToolPad. The Quantize Tool's Control window opens.
 3. All buttons and sliders are already in the correct position. Close the Quantize Tool's Control window to get it out of the way.
 4. Click on the Track you want to Quantize.
 5. Choose Toolize from the Tracks window's Track menu.
-

Example: Quantize A Song To 1/16 Notes

6. Put the Quantize Tool in the ToolPad.
7. Select Edit PadTool Controls from the Tracks window's Windows menu, or hold down a shift key while clicking on the ToolPad. The Quantize Tool's Control window opens.
8. Change the resolution to 1/16 by clicking on the button after the Resolution: prompt.
9. Close the Quantize Tool's Control window to get it out of the way.

10. Put the Left Edit Flag at the beginning of your Song.
11. Put the Right Edit Flag at the end of your Song.
12. Choose Toolize from the Tracks window's Edit menu.

★ TIP ★ As long as you do not perform another editing operation or open a Track's Edit window, you can still select Undo from the Tracks window's Edit menu.

Quick Patch

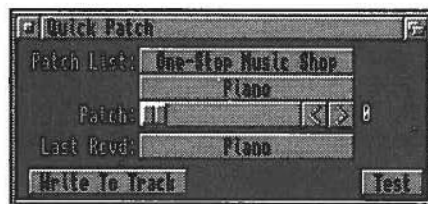


DESCRIPTION: Quick Patch generates Program Change events so that you can quickly change instruments on your synthesizer. It also transmits the Program Change every time you activate the Start or Play button in the Transport Controls. As a result, when you reload a Song, the Quick Patch Tools installed in your PipeLines automatically set up your instrument patches.

NOTE → The terms Program and Patch are interchangeable terms for the same thing: a particular instrument sound.

USAGE: PipeLine

CONTROLS: The Quick Patch Control window displays a Patch Name list, the selected patch name and number, the last Program Change to pass through, and options to test the Patch and write it into the Track:



Patch List

Bars&Pipes Professional maintains a Patch List for each of your sound modules. Each Patch List assigns names to all Program Change numbers. For example, Program Change number 1 might be "Piano" on a mythical Kravenblatt X15. The equally mythical Kravenblatt X15 Patch List assigns 128 such names for the 128 patches. To define and load Patch Lists, use the Define Patch List window, covered in chapter 30.

Click on the Patch List button to select the destination sound module from a scrolling list of available Patch Lists. If the word Undefined appears after

CHAPTER TWENTY-SIX

the Patch List prompt, no Patch Lists are installed in Bars&Pipes Professional.

- ★ **TIP** ★ If you own The PatchMeister, you can create Patch Lists automatically for all your synth banks.

Patch

Select the Patch by either dragging the Patch slider or clicking on the Patch Name and selecting from the scrolling pop-up menu.

Last Recvd

The Last Recvd button displays the last Program Change that passed through the Quick Patch Tool. If you have Program Change commands embedded in the Track, this is very useful because it displays the changing Patch Names as your Song performs.

Write To Track

The Write to Track button inserts the currently selected Program Change into the Track at the current Song Position flag location.

Test

The Test button sends out an arpeggio, so that you can hear what the selected patch sounds like at various pitches.

- NOTE** → After using the Write to Track button at various points in your Track, set Quick Patch to the Program Change you would like at the beginning of the Track. This is important to do because Quick Patch continues to play its selected Patch every time the music starts.

Repeat



DESCRIPTION: The Repeat Tool plays each entered note continuously, cycling within a specified time span. Each time you add a note to the Repeat Tool, it includes that note with the pattern of notes currently playing. Only by pressing the Stop button in the Transport Controls can you end the repeat cycle.

USAGE: PipeLine

CONTROLS: To adjust the interval at which the pattern repeats, open the Repeat Tool's Control window.



In it, you'll find the following options:

Interval

The Repeat Tool displays the loop interval as both a numeric value in measures, beats and clocks, and a note value with an optional triplet modifier. To select a value, either enter one after the prompt or choose one by clicking with the mouse on the displayed note and selecting from the pop-up menu.

Triplet

Should you desire a triplet, click on the Triplet button in association with the note value.

- ★ **TIP** ★ Aside from using the Repeat Tool to create patterns, you can also use it to help set up your synthesizers or mixing board. Place the Repeat Tool in the Track you are testing, then play a note into the PipeLine. The Repeat Tool plays the note over and over, which frees you to adjust controls without having to reach over and play a test note on your keyboard.

Reverse



DESCRIPTION: The Reverse Tool reverses in time all MIDI Events between the Edit Flags. Only usable from the ToolPad with the Toolize option, it makes the sequence play backwards.

USAGE: ToolPad.

CONTROLS: With the Reverse Tool in the ToolPad, put the Left and Right Edit Flags around the area to be reversed. Then, choose Toolize from either the Track or Edit menu in the Tracks window to reverse the Track.

- ★ **TIP** ★ Use the Reverse Tool in conjunction with a backwards guitar sound to create a backwards guitar solo.

Sforzando



DESCRIPTION: Use the Sforzando Tool to create a Sforzando, Sforzando Piano, or Sforzando Crescendo effect. Sforzando accomplishes these effects by sending a stream of Poly After-Touch events on the heels of every note.

CHAPTER TWENTY-SIX

"Sforzando" is a loud emphasis at the beginning, followed by a rapid reduction in volume to a medium level. "Sforzando Piano" is a loud attack that decreases to a quiet level. "Sforzando Crescendo" is a loud attack that first decreases to a quiet level, then increases gradually to full volume.

NOTE → Your keyboard or sound module must support Poly After-Touch for the Sforzando Tool to have any audible effect.

USAGE: ToolPad, PipeLine.

CONTROLS: To choose the effect you'd like, click on the appropriate button in the Sforzando Control window.



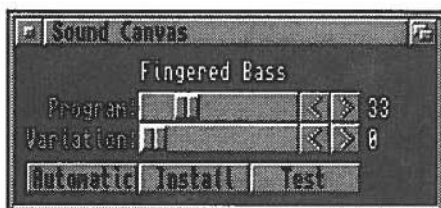
Sound Canvas



DESCRIPTION: If you own a Roland Sound Canvas sound module, use the Sound Canvas Tool to set up the Patch for each Track. Unlike most synthesizers, the Sound Canvas uses a combination of Program Change and Control Change events to set its patch. The General MIDI Tool also works well with the Sound Canvas, but it doesn't select the additional variations provided by the Control Change protocol.

USAGE: PipeLine.

CONTROLS: Set the Sound Canvas instrument and optionally install it in the Track with the Sound Canvas Control window.



The following features are found in the Control window:

Program

Drag the slider after the Program: prompt to change the Patch number.

Variation

Drag the slider after the Variation: prompt to change the variation for that Patch number. Some Patches have more Variations than others. Many have none. The last variation is always the MT-32 variation.

Automatic

Enable the Automatic button to tell the Sound Canvas Tool to output the selected Patch change whenever the Transport starts. If the Automatic button is off, the Sound Canvas Tool does nothing.

Install

The Install button places the Patch change command in the Track at the current Song Position. Use this function in lieu of the Automatic feature.

Test

The Test button sends out the Patch followed by an arpeggio so that you can hear the Patch.

Stop!



DESCRIPTION: If you experience stuck notes when you stop Bars&Pipes Professional, your synthesizer may not be responding properly to the MIDI All Notes Off command. The Stop! Tool automatically sends MIDI note offs for every note that went through it during playback. It also sends out a Sustain Pedal Off message and a Modulation Wheel Off message (Control Change #64,0 and #1,0 respectively).

USAGE: PipeLine

CONTROLS: The Stop! Tool has no Control window.

Place the Stop! Tool at the end of each PipeLine.

Subdivider

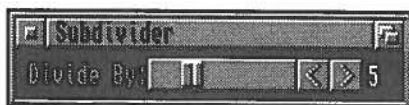


DESCRIPTION: Only usable in the ToolPad, the Subdivider Tool divides a note into smaller notes by a preset fraction. For example, it breaks a whole note into half-note triplets when you set the subdivision fraction to three.

USAGE: ToolPad.

CHAPTER TWENTY-SIX

CONTROLS: To specify the subdivision fraction, drag the "Divide By" slider left or right. Select a value from 0 (no effect) to 19.



Tempo Tap

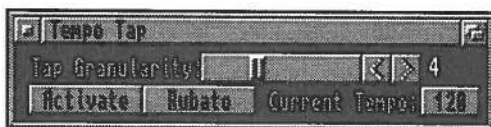


DESCRIPTION: The Tempo Tap Tool performs two functions.

1. It receives tapped notes and converts them into an overall tempo.
2. It creates a Tempo Map from a varying tapped tempo throughout the course of a Song. This is called the Rubato function. The Rubato function allows you to tap your foot on a foot trigger while you play, causing Bars&Pipes Professional to keep time with your foot's tempo. This function can also be used if you've entered music in strict time, and want to add tempo fluctuations by tapping in the tempo.

USAGE: PipeLine.

CONTROLS: The Sequencer must be playing or recording for the Tempo Tap Tool to perform its function.



The following parameters can be set in the Tempo Tap Tool:

Activate

The Activate button must be active for the Tempo Tap Tool to perform its function. If it is not active, the Tempo Tap Tool does nothing. Use the Activate button alone to set an overall Tempo for your piece.

Rubato

When the Rubato button is active in conjunction with the Activate button, Tempo Tap keeps Track of all tempo changes and when they occur. When you issue a Stop command from the Transport, Tempo Tap asks you if you would like to replace the current tempo list. Select Yes to create a new Tempo Map, or No to keep the old one.

NOTE → Use the Rubato function to create lifelike, expressive performances.

Tempo Display

The Tempo display shows the tempo according to the Tempo Tap Tool. The maximum tempo for Bars&Pipes Professional is 350 beats per minute. The Tempo Tap Tool can read higher tempos, but can only set Bars&Pipes Professional to play a maximum of 350 beats per minute.

Tap Granularity

The Tap Granularity slider controls how many taps it takes for Tempo Tap to decide upon a tempo. The greater the number, the higher the accuracy. However, it loses resolution since it takes more taps to find a tempo. Set the slider to a smaller number for higher resolution, but at a cost of accuracy. The Granularity range is from 2 taps to 8 taps. The default is 4 taps.

Transpose

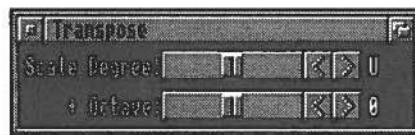


DESCRIPTION: The Transpose Tool shifts notes by a preset interval within the chosen key. This is very useful because it pays attention to the musical nature of the notes.

NOTE → Do not confuse the Transpose Tool with the Modulator Tool. Transpose shifts notes by a preset interval within the key, while Modulator changes the key by shifting all notes by the exact same amount, regardless of Key & Scale.

USAGE: PipeLine, ToolPad.

CONTROLS: To set the shift, set both the Octave and Scale Degree in the Transpose Control window:



Scale Degree

Drag the Scale Degree: slider to the interval, from -7th to +7th degrees.

+ Octave

Drag the Octave slider to set the octave transposition.

CHAPTER TWENTY-SIX

Triad

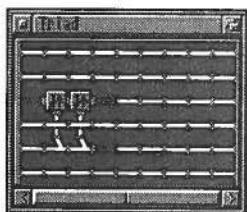


DESCRIPTION: The Triad Tool creates a chord by playing two notes above any notes that enter.

SPECIAL TYPE: MacroTool.

USAGE: PipeLine, ToolPad.

CONTROLS: The Triad Tool, a MacroTool, consists of two Transpose Tools, one set to shift up a third, the other, to shift up a fifth, and two Merge In Tools. To create a different chord configuration, edit the Transpose Tools by double-clicking on their icons. For example, to create a chord inversion, alter the second Transpose Tool to shift down a fourth, instead of up a fifth.



Trigger



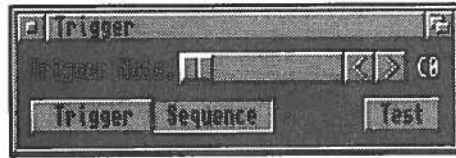
DESCRIPTION: The Trigger Tool performs a Track's sequence in response to a specific note entering it. The Trigger Tool takes over control of the Track's sequence. When you click on the Start button, the Track remains silent while other Tracks play. Instead, the Trigger Tool waits for a trigger note. When it receives the trigger note, the Trigger Tool performs the Track's sequence.

Although the Trigger Tool controls the playback of the Track, it leaves all other functions untouched. Edit and record the Track as you normally would, then use the Trigger Tool just to perform.

SPECIAL TYPE: Sequencer.

USAGE: PipeLine.

CONTROLS: Set the Trigger Note and activate the Trigger mode in the Trigger Control window:



Trigger Note

Drag the Trigger Note slider to set the which note triggers the performance.

Trigger

To enable Trigger mode, click on the Trigger button. When enabled, the arrival of a trigger note starts playback of the Track's sequence.

Sequence

To disable Trigger mode and return to normal sequencing, click on the Sequence button.

Test

To listen once to the sequence, click on the Test button.

UnQuantize



DESCRIPTION: The UnQuantize Tool alters the timing of notes by a random amount, which gives quantized music a less mechanical feel.

USAGE: PipeLine, ToolPad.

CONTROLS: Set the Randomization amount with the slider. When you drag the slider all the way to the left, the UnQuantize Tool does nothing. When you drag it all the way to the right, the UnQuantize Tool shifts notes large random distances, up to a sixteenth note apart. As you move the slider from left to right, the Tool shifts notes greater and greater random distances.



CHAPTER TWENTY-SIX

UnStick



DESCRIPTION: The UnStick Tool eliminates unwanted "stuck" notes by reorganizing all notes which pass through it and assuring that Note Off events follow Note On events. It also removes overlapping notes, which can confuse some synthesizers.

USAGE: PipeLine.

CONTROLS: None. Place the UnStick Tool on the Output PipeLine of each Track.

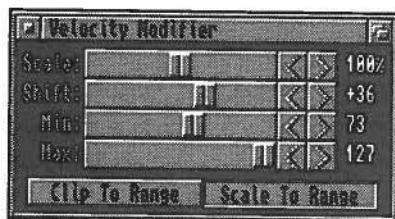
Velocity Modifier



DESCRIPTION: The Velocity Modifier Tool scales and/or offsets note velocities.

USAGE: PipeLine, ToolPad.

CONTROLS: Velocity Modifier works by first scaling the note velocity, then adding a constant offset.



The following options are available in the Velocity Modifier:

Scale

The Scale slider determines the scaling. The scale can range from 0% (no velocity, silent notes) to 200% (twice the velocity, twice the loudness). By default, the scale is 100% (no change in velocity). For example, to increase all velocities by 10%, set the scale to 110%.

Shift

The Shift slider sets the offset. Velocity Modifier adds the designated shift value to the scaled velocity. The shift value can be set from -128 to +128.

Min

In conjunction with either Clip to Range or Scale to Range, the Min slider sets a lowest velocity value.

Max

Conversely, the Max slider sets a highest velocity value.

Clip to Range

When Clip to Range is active, Velocity Modifier forces velocities into the range set by Min: and Max:. It forces velocities below Min: to be equal to Min:, and velocities above Max: to be equal to Max:.

Scale to Range

When Scale to Range is active, Velocity Modifier scales velocities into the range set by Min: and Max:. This provides compresses velocities where Clip to Range limits them.

NOTE → The Min: and Max: sliders are only effective when either Clip to Range or Scale to Range is selected.

Velocity Splitter



DESCRIPTION: The Velocity Splitter passes all notes at or above a preset velocity down the PipeLine. It diverts all notes below that velocity to another PipeLine, if connected.

SPECIAL TYPE: Branching.

USAGE: PipeLine.

CONTROLS: To edit the split point's velocity value drag the Split Velocities Below: slider.



★ **TIP** ★ Use this Tool to pass notes on and above a velocity on your keyboard to one MIDI channel, and notes below that velocity to another. For instance, channel high velocity notes to a trumpet with a sharp attack and low velocity notes to a trumpet with a soft attack.

CHAPTER TWENTY-SIX

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Chapter 27

Description



Although it is considered a Music Tool, the Pattern Tool is so extensive in its capabilities that we've dedicated an entire chapter to it.

The Pattern Tool provides a pattern-based alternative to the linear Track-oriented sequence recording and playback methods used by the Sequencer. Instead of playing or recording one straight segment from start to finish, the Pattern Tool plays the same short segment of music over and over again a predetermined number of times. The Pattern Tool accomplishes recording by playing the same section over and over again while you continually add and remove notes "on the fly." Pattern style sequencing is very useful for creating and performing rhythmic parts, especially drums.

Each Pattern Tool stores one looped section of music. You can tell the Tool when to start playing and how many times to play. You can then chain multiple Pattern Tools in one Track to perform multiple sections.

To help identify multiple Pattern Tools in a Track, you assign each Pattern Tool a name. Each Tool draws its icon in the PipeLine with the first letters of the name included.

The Pattern Tool contains most of the Loop Tool's performance options. It provides Free Run, Trigger and Riff performance modes, as well as Transposed and Modulated playback options. Unlike the Loop Tool, however, it incorporates a complete graphic editor.

Using the Pattern Tool's editor, you can enter notes in a piano roll or a drum grid. The drum grid provides the ability to use and modify drum maps. Like the Loop Tool, you can cut and paste to or from the Pattern Tool into the Bars&Pipes Professional ClipBoard or a Track.

NOTE → The Pattern Tool only records and plays MIDI note events. It does not support other MIDI event types. For pattern-style looped recording and playback of other event types, use the Loop Tool.

The Pattern Tool provides three playback modes:

1. In Free Run mode, the looped section starts playing at a predefined start point, and repeats a user-selected number of times.
2. In Trigger mode, a specific incoming note triggers the looped section to play immediately. The Tool ignores all other notes.

CHAPTER TWENTY-SEVEN

3. In Riff mode, an incoming note triggers the looped section to play immediately. If multiple overlapping notes enter it, the Pattern Tool plays multiple overlapping copies of the looped section. This provides a powerful performance Tool when used in conjunction with the Modulate and Transpose options (below.)

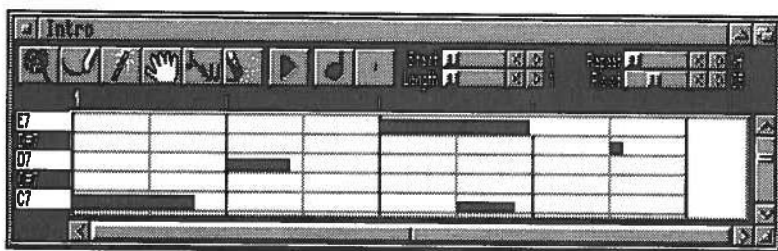
The Pattern Tool provides two options for shifting the pitch of playback under user control:

1. The Transpose option shifts the looped section up or down in the same key. The Pattern Tool determines the transposition by measuring the distance between a user-specified root note and the entering note. Notes shifted by the Pattern Tool in this mode abide by the user-specified Key & Scale/Mode in the Song Parameters. As a result, the shifted pattern stays in key, much like the Transpose Tool.
2. The Modulate option shifts the looped section up or down a constant distance determined by the difference between the note entering the Tool and the user-specified root note. Like the Modulator Tool, this shifts the pattern into a different key.

Usage

To use the Pattern Tool, place it a Track's PipeLine. You can place any number of Pattern Tools in one PipeLine and set each to play at a different time. You can even set multiple Patterns to overlap with different loop lengths.

- ★ TIP ★ Place the Pattern Tool in the Input PipeLine. When you've finished designing the Pattern, put the Track in record mode and record the pattern in the Track. Open the Pattern Tool's Control window by double-clicking on the Pattern Tool in the PipeLine.



Controls

The Pattern Tool's Control window displays a piano-roll grid. This Pattern grid displays the piano keys down the left edge of the window as a reference. Across the top, the Pattern grid displays the time reference as measure numbers subdivided by beat markers. It displays notes as blue bars, the vertical position denoting pitch and the horizontal denoting time. Each box in the Pattern grid has a length defined by the grid resolution option in the Set grid... menu command. Each note resembles a box.

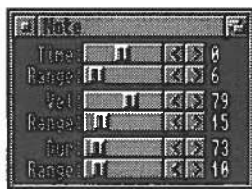
NOTE → The grid displays drum names down the left border instead of piano notes if a drum format is chosen in the Note Map... Format menu.

To view higher or lower pitches, drag the scroll bar located to the right of the Pattern grid. To view the Pattern grid at different points in time, drag the scroll bar located at the bottom of the Pattern grid.

Like most windows in Bars&Pipes Professional, the Pattern Tool's editor window provides the standard row of control buttons across the top. Click on the Magnifying Glass, Pencil, Magic Wand Hand, Duplicator, and Eraser to determine the behavior of the mouse.

The Magnifying Glass

The Note window appears when you click on the Magnifying Glass button.



When you click the mouse pointer on a note in the Pattern grid, the note's internal values display. Drag the sliders to set the following parameters:

Time

Use the Time: slider to set the note's time offset, measured in 192 pulses per quarter note.

Range

Use the Range: slider to set the degree of randomization in clocks. The Pattern Tool randomizes the timing of the note as it plays it to give it some extra "feel."

CHAPTER TWENTY-SEVEN

Vel

Use the Vel: slider to adjust the note's velocity, a MIDI value from 1 (very soft) to 127 (very loud).

Range

Use the Range: slider to randomize the velocity of each note. This slider sets the degree of "feel."

Dur

Use the Dur slider to change the note's duration, measured in 192 clocks per quarter note.

Range

The Pattern Tool also randomizes the duration of each note. Change the Time and Range values by using the Range: slider to change the default values assigned to new notes.

The Pencil

Use the Pencil to enter notes into the Pattern grid.

Example: Entering A Note With The Pencil

1. *Place the Pencil tip in a box and click once. The note plays and appears in the box as a red bar. To make a longer note, click and drag the Pencil to the right. To make the note louder or softer, click and drag up or down.*
2. *Notice that the Note window that you opened with the magnifying glass changes to display each note as you create it.*
3. *With the Pencil enabled and the Play button activated, enter notes on-the-fly by clicking on the piano-roll to the left. Alternatively, enter notes directly on your MIDI keyboard.*

NOTE → When you're entering notes on-the-fly, the Pattern Tool can lock the notes to the Pattern grid, or record them exactly as you play them. Enable the Auto Quantize flag in the Preferences menu if you want the notes locked to the Pattern grid, otherwise, disable the Auto Quantize flag.

The Magic Wand

Use the Magic Wand to change the length or dynamic level of a note. Put the Wand tip on any note in the Pattern grid, click and hold on the note. Drag the note to change the length and dynamics and release the mouse button. Drag up to increase the note's velocity, drag to the right to increase the note's length. Watch the values change in the Note window (if it's still open.)

★ TIP ★ The Pencil automatically turns into the Magic Wand if you click down and hold on an existing note.

You can also use the Magic Wand to create custom drum maps. If you've set the display to be a drum grid, highlight the EDIT button above the drum names. Then, click on a drum name with the Magic Wand. The Edit Item: requester opens, allowing you to change the note number of the selected drum. Please read later in this chapter for more information on drum maps.

The Hand

Use the Hand to drag notes from one position in pitch and time to another. Click on the Hand button. Place the Hand over a note and click and drag it anywhere in the Pattern grid. The Pattern Tool plays the note as you drag it.

The Duplicator

Use the Duplicator to make a copy of a note. Click on the Duplicator button and click on a note. Drag the note to a new position.

The Eraser

To remove notes, click on the Eraser button. Click on a note with the Eraser to remove it. Drag the Eraser through several notes to remove them all at once.

Like the Pencil, use the Eraser from the piano-roll or MIDI keyboard. Erase notes by holding down the notes on your keyboard to remove while the Pattern Tool plays.

The Play Button

Click on the Play button to hear the pattern. While the pattern plays, the Play button becomes the Stop button. Click on it again to stop the performance. The pattern plays continuously, looping back to the start, until you stop it.

NOTE → Although there is a Play button, there is no Record button. Instead, placing the mouse in Pencil mode automatically enters the Pattern in Record.

The Zoom In And Zoom Out Buttons

Click on the Zoom In and Zoom Out buttons to control the viewing resolution of the Pattern grid.

The Start Slider

The Start slider sets the starting measure for the performance. Use the Start slider in conjunction with the Free Run performance mode. When the Sequencer reaches the measure number equal to the Start slider value, the Pattern Tool begins playing.

CHAPTER TWENTY-SEVEN

The Length Slider

The Length slider sets the length of the pattern in measures. When you change the Length value, the Pattern grid changes accordingly.

The Repeat Slider

The Repeat slider determines how many times the pattern repeats once it has begun playing during a sequence. This effects all performance modes, but not loop editing and recording.

The Root Slider

Use the Root slider in conjunction with the Transpose and Modulate options. This value determines the note to be compared with incoming notes for pitch shifting.

The Edit Button

The Edit button is only available in the drum grid. When the Edit button is highlighted, the mouse modes operate on the drum names in order to create custom drum maps. Please see Drum Maps, below, for more information.

The Pattern Tool Menu

Unlike most Tools, the Pattern Tool's Control window comes with a full complement of menu commands and options.

The Pattern Menu

Use the first menu, the Pattern menu to clear, load, save, copy and set the Pattern name and Pattern grid size:

Clear

The Clear command clears the current Pattern grid of all notes.

Load...

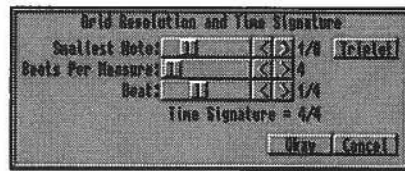
Select Load... to read a previously saved Pattern grid of notes from disk.

Save...

Select Save.. to save the current Pattern grid of notes to disk.

Set grid...

Open the grid Resolution and Time Signature requester by selecting the Set grid... menu command.



Drag the top slider, Smallest Note: to set the duration of a Pattern grid rectangle. Choose any size from a quarter note to a sixty-fourth note. For a triplet feel, click on the Triplet button, making the Pattern grid shorter so three rectangles fit in the space of two. A small Pattern grid Resolution provides greater rhythmic complexity, but at the expense of a cluttered display. No two notes may occupy the same rectangle in the Pattern grid.

NOTE → Regardless of the Pattern grid resolution, you can always get the highest performance resolution by turning off the Auto Quantize option (see below.)

Set the Time Signature by dragging the Beats Per Measure: and Beat: sliders. Click on Okay to accept the changes, Cancel to ignore them.

Name...

Open the Pattern Name requester by selecting the Name... command.



Enter a new name for the Pattern. The Pattern Tool icon displays the first few letters of the name in its center. This helps identify different Patterns in the same PipeLine.

Paste from ClipBoard

To replace the current Pattern with the currently selected Clip in the ClipBoard, select the Paste from Clipboard command. Use this command to transfer sections of music from the Graphic Editor.

Copy to ClipBoard

To install a copy of the Pattern in the ClipBoard, select the Copy to ClipBoard command.

Paste from Track

Select a section of Track with the Edit Flags and choose Paste from Track to copy the Track's contents into the Pattern grid. This command always uses the Track that shares the PipeLine with the Pattern Tool. Use this command

CHAPTER TWENTY-SEVEN

to transfer an already recorded piece of music from the Track into the Pattern Tool for further work.

To Paste from a different Track, use the ClipBoard.

Copy to Track

Copy to Track copies the Pattern grid's contents into the Track, starting from the left Edit Flag. Once again, this always copies to the Track that shares the PipeLine with the Pattern Tool.

The Performance Menu

The options in the Performance menu control the behavior of the Pattern Tool when Bars&Pipes Professional performs. These options work in conjunction with the Start, Length, Repeat, and Root sliders discussed earlier in this chapter

The following options can be found in the Performance menu:

Free Run

The default mode, Free Run, sets the Pattern Tool to synchronize with the Transport Controls. Once the sequence reaches the measure defined by the Start slider, the pattern performs the number of times defined by the Repeat slider. If the Modulate or Transpose options are active, the performance shifts in pitch every time a note enters it.

Trigger

Trigger mode sets the Pattern Tool to play asynchronously. It starts whenever the Trigger note, defined by the Root slider, enters the Tool. This can be a very useful performance Tool. Trigger mode ignores the Modulate and Transpose options.

Riff

Riff mode directs the Pattern Tool to play whenever any note enters it. If the Modulate or Transpose options are active, the sequence plays transposed or modulated by the distance between the trigger note and the Root note, set with the Root slider.

If multiple notes enter, Riff mode plays multiple copies at once.

Transpose

When in Transpose mode, the Pattern Tool uses incoming notes to Transpose the pattern up or down, determined by the distance between the incoming note and the root note selected with the Root slider. Transpose mode uses the Track's Key parameter to keep all notes in the same Key.

For example, you might create a simple pattern that plays a chord arpeggiation. Set the Root slider to be the same note as the root note of the

chord, so it that specific note comes in, the chord plays directly. Set the Pattern Tool to loop forever in Free Run mode and turn on the Transpose option. Start the Transport and the Pattern Tool starts performing the chord arpeggiation. Play a new note into the PipeLine. The Chord jumps to the new note, staying perfectly in key. This is a wonderful way to work out chord changes, much like SuperJAM!

Modulate

When in Modulate mode, the Pattern Tool uses incoming notes to shift the Pattern up or down. Unlike the transpose mode, the shift is strictly linear, without any regard for the Key. As a result, it actually changes the key of the Pattern.

The Note Map Menu

Use the Note Map menu to control the mapping of notes in the Pattern grid to keyboard or drum notes and create and save Drum Maps. The following commands are found in the Note Map menu:

Format...

Choose between a Drum grid and Piano roll by selecting from the appropriate Format... submenu item. Use a Piano roll for musical Patterns and the Drum grid for creating Drum rhythms.

If you choose the Drum grid, the three next menu options become available:

Use Default Drums

Use Default Drums resets the Drum Map to the default Drum Map (General MIDI standard.)

Load...

Load... reads in a previously saved Drum Map.

Save...

Save a Drum Map you've created by selecting the Save... command. If you have a drum module that uses a different Drum Map from the General MIDI (also MT-32) standard, create one and save it to disk.

For more on creating you own Drum Maps, please see the Drum Maps section later in this chapter.

The Preferences Menu

Use the following commands contained in the Preferences menu to select various options:

CHAPTER TWENTY-SEVEN

Auto Quantize

Selecting Auto Quantize causes all notes that enter the Pattern Tool to quantize to the Tool's grid resolution. If you'd like to record without quantization, turn this option off. You can still record one note per grid rectangle, but each has a time offset added to maintain the exact timing of the performance. You can open the Magnifying window for a nonquantized note and observe that the Time: value is rarely 0.

Metronome

Turn on the Metronome to hear a regular click as you record and edit in the Pattern Editor. The metronome clicks on every beat of the time signature.

Set Metronome...

Set the Metronome to a specific MIDI note by selecting the Set Metronome... command. The mouse pointer turns into a metronome. Click on the note in the Pattern grid that you would like to use as the metronome.

Auto Scroll

If you'd like the Pattern Tool's window to scroll as it performs, enable the Auto Scroll option.

Drum Maps

As you probably know, in order to create a drum kit, MIDI sound modules assign different notes to different drum sounds. This relationship is called a Drum Map.

Unfortunately, different sound modules assign different notes to different drums. As a result, each type of sound module requires a different Drum Map.

Today, most synth modules abide by the General MIDI specification for drum maps. Still, you may have a machine with its own unique choices for snare, kick, cymbals, etc.. The Pattern Tool provides a complete system for designing and using your own Drum Map.

Editing The Drum Map

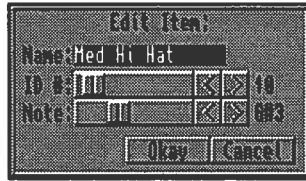


The Edit button sits above the list of drum names. Activate it to enable Drum Map editing.

NOTE → The Edit button only appears when you've selected the Drum grid in the Format menu.

With the Edit button activated, use the Pencil, Magic Wand, Eraser, Hand, and Duplicator to edit the drum names directly. Select the Magic Wand and

click on one of the drum names to open the drum map Edit requester for that drum name.



The Edit Item: requester displays the name of the drum, along with an ID number and the note value associated with the drum. Change the name of the drum by clicking after the Name: prompt and typing in a new name. Leave the ID # alone for now (more on this later). Change the note value by sliding the slider after the Note: prompt.

Creating A Custom Drum Map

The best way to create a drum map for your instrument is to start with the default drum kit, then edit each drum sound with the Magic Wand. For each drum, adjust the Note: value to the correct note for your instrument. For example, most MIDI instruments play a closed high hat on note F#3. If your instrument plays a closed high hat on note D4, click with the Wand on Closed High Hat, and change the note value to D4.

Adding New Drum Sounds

If your MIDI instrument supports more sounds, and you need to add additional drum sounds that aren't named already, activate the EDIT button and click in the drum name area with the Pencil. The drum map requester opens. enter the name for your drum sound, and set the corresponding note value. The Pattern Tool automatically sets the ID number for you.

Copying A Drum Sound

With the EDIT button highlighted, click on a drum name with the Duplicator. The drum map requester opens. This option allows you to create a new drum sound with the same name. The ID # is automatically set to an unused ID #, and the Note: value is set to C0. Drag the Note: value to find the right sound and edit the name as appropriate.

Erasing A Drum Sound

With the EDIT button highlighted, click on a drum name with the Eraser. The drum name and corresponding row in the Pattern grid are erased.

CHAPTER TWENTY-SEVEN

Reorganizing The Drum Map

With the EDIT button highlighted, click on a drum name with the Hand. Slide the Hand up and down the drum name list to move the drum name to a new position in the list. Notice that the Pattern grid rearranges, dragging the notes with the drum name.

The ID Number

The ID number is used internally by the Pattern Tool. It keeps Track of which drum sound is assigned to which note in different drum maps. For instance, let's say that Bass Drum 1 is set up with an ID # of 2 in one Pattern Tool, and you set up another Pattern Tool with a Closed High Hat with an ID # of 2. If you save a pattern from the first Pattern Tool, and load the same pattern into the second, the second actually plays a closed high hat each time the first would have played a bass drum sound.

No two drum sounds can share the same ID number. This is why when adjust the ID #: slider, it skips from one number to another. We recommended that you do not adjust the ID #: slider.

Chapter 28

Overview

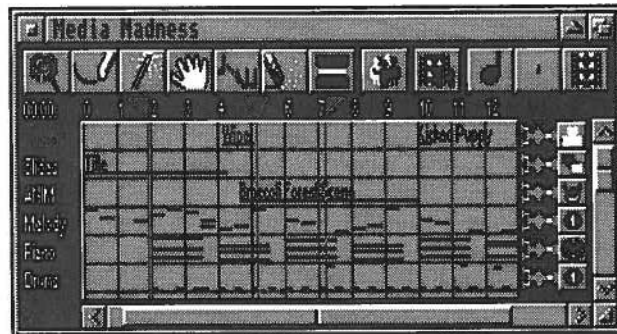
Media Madness brings a whole new dimension to Bars&Pipes Professional. It orchestrates multiple Tracks, each containing different media, alongside your musical Tracks. For example, one Media Madness Track might play an animation while another controls the Video Toaster and several more Tracks perform an accompanying MIDI score.

Media Madness integrates each media type by using a Tool designed for that particular media. A Toaster Tool (Toasty) controls Video Toaster transitions. An IFF Image Tool (The Last Slide Show) displays images. Another Tool, the G-LOCKenspiel Tool, controls the new GVP genlock.

Each Track can hold just one Media Madness Tool. Each Media Madness Tool determines what type of media the Track represents and is always placed as the last Tool in the Track's PipeLine, the Output Tool.

Like all of Bars&Pipes Professional's Tools, each Media Madness Tool loads separately. As a result, new Tools representing new media can be added later. And, you only need to load the Tools you want for a particular configuration.

The Media Madness window integrates the Media Madness Tools into Bars&Pipes Professional. It displays each Track horizontally as a time line with vertical SMPTE or music time reference marks. It displays multi-media events by name in each Track's time line. To the right of the time line, it displays the Track's Media Madness, or Output, Tool.



In function, the Media Madness window is a cross between the main Tracks window and the individual Edit windows. The Main menu set is available, along with various editing Tools to create, move, edit, and erase events.

CHAPTER TWENTY-EIGHT

You can access the Media Madness window either by selecting the Media Madness option in the Main menu's Windows menu, or double-clicking on the Media Madness window's icon.

We have also provided the Media Madness Player, so that you can play your multi-media compositions without running Bars&Pipes Professional. The Media Madness Player is freely distributable, so you can give copies of your multi-media creations to others.

Preparing a Media Madness Track

Before editing Media Madness events in the Media Madness window, you must prepare the Track by placing a Media Madness Tool in it and configuring that Tool.

Placing A Media Madness Tool In A Track

Drag a Media Madness Tool from the ToolBox and place it on the Output Tool to install the new Tool. This sets the Track to the new media. For example, placing a Toasty Tool in a Track sets the Track to play Toaster transitions.

Initializing The Media Madness Tool

Double-click on the Tool to open its Control window. Like all Control windows, you can keep its Control window open while you work in the Media Madness window. Most Media Madness Control windows set up specific media events for the Track. The Toasty Tool sets up a palette of Toaster transitions. The Last Slide Show Tool loads a set of IFF paintings. Please refer to the specific Tool in the next chapter, Multi-Media Tools, for more information.

Most Media Madness Tools of any complexity allow you to load and save their settings. Therefore, setting up a Tool involves both installing it and loading a previously prepared setup into it. You can also use ToolTrays to store, load and save Media Madness Tools.

Hit List Translation

In most cases, the Media Madness Tool's Control window assigns each event to a specific MIDI note. This is important to understand. Bars&Pipes Professional's Sequencer and PipeLines communicate in the language of MIDI. However, each new media thinks in terms all its own. A sound effect Tool deals with sampled sounds. An ARexx Tool works with text messages.

As such, we need to translate each Tool's language into the common language of Bars&Pipes Professional: music. Fortunately, this is remarkably

simple and painless due to a new feature in Bars&Pipes Professional - Hit List Translation.

The Hit List Translation mechanism assigns a textual description to each note in the Track. For example, C5 might have the description "door slam" while D#4 has the description "dog bark." In the most obvious application of this, we might have a sampling synthesizer set up to respond to the note C5 with the sound of a door slam. So, if C5 really means "door slam," let's think of it that way, instead of as the musical note. Hit List Translation assigns "door slam" to C5.

Most Media Madness Tools also present obvious applications of Hit List Translation. Image files, sound effects, visual effects, etc., should all be described by name rather than MIDI note, even if MIDI notes determine the timing of each of these events.

Installing And Editing Hit Lists

Bars&Pipes Professional's List Editor supports the entry and use of Hit List Translations. You can define the textual equivalent of each note by directly typing it in. However, this is rarely necessary because the Media Madness Tools install Hit List Translations directly into the Track.

Each Media Madness Control window lets you assign a specific command to each note. The command might be a Toaster ARexx command, a particular IFF file, or a sound effect sample file, depending on the Tool. The Tool automatically installs textual equivalents for each command in the Track's Hit List Translation table. Please see the next chapter, Multi-Media Tools, for a complete description of each Tool's Control window.

The Media Madness Window

Once you've used the Media Madness Tool's Control window to set up the effects you'd like to use, return to the Media Madness window. Because the Tool automatically installs the Hit List Translation, you can enter, edit, erase and drag media events by name, rather than MIDI note.

Use the Pencil to enter events. When you do so, the Media Madness window presents a scrolling menu of the events you've entered in the Tool's Control window. Use the Magic Wand to change the value of an event, the hand to drag it to a different time, the ToolPad to alter the event, the Duplicator to copy and drag it, and the Eraser to remove it. These functions are fully explained in the sections below.

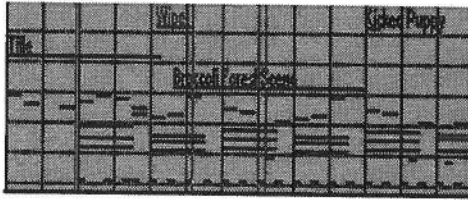
Of course, the standard system gadgets for sizing, closing, and bringing the window to the front and back are in place. The scroll bar on the right side allows you to scroll through the list of Tracks, while the bottom scroll bar allows you to scroll through the measures.

CHAPTER TWENTY-EIGHT

Let's take a closer tour of the Media Madness window:

The Sequence Display

The Sequence Display consumes takes up most of the Media Madness window. This feature is very much like the Sequence window's Sequencer section.



However, in the Media Madness window, Media Madness events display as hit names, rather than as notes. Selected events appear red.

In the Sequence Display area, you can:

- Examine and modify a note event with the Magnifying Glass. Use this to fine tune event parameters.
- Create an event with the Pencil.
- Change an event into another event, with the Magic Wand.
- Move an event left and right in time with the Hand.
- Duplicate an event with the Duplicator.
- Erase an event with the Eraser.
- Toolize an event with the ToolPad.
- Open the List Edit window for a Track by double-clicking on the Track in any mouse mode other than Pencil.

NOTE → If the Graphic Edit window has previously been open for a given Track, then the Graphic Edit window opens. In this case, access the List Edit window by choosing List Editing from the Graphic Edit window's Prefs menu.

The Edit And Song Position Flags

Above the Sequence Display sit the Song Position Flag and the two Edit Flags. These are the same Flags that are in the Tracks window.



When you drag one of these Flags in the Media Madness window, the Tracks window Flags also move. The Song Position and Edit Flags in the Media Madness window are in fact the same as the Flags in the Tracks window.

The Title Bar

The Title bar of the Media Madness window displays two sets of numbers. These numbers represent the SMPTE time and music time of the most recently grabbed object. They update whenever a Flag or Event is dragged.

The Track Name

Like the Tracks window, the Media Madness window displays the Track Name for each Track to the left of the Sequence Display. Normally, the Track Name is white. If the Track is highlighted, the Track Name appears in red.

In the Track Name area, you can:

- Create a new Track by clicking in the Track name area with the Pencil, or select New from the Track menu.
- Change a Track's Name or real-time status by double-clicking on the Track name with the Saxophone, or single clicking with the Magic Wand. This opens the Track Name requester.
- Grab Track names with the Hand to change the order of the Tracks. Click on a Track name with the Hand, and drag it up or down.
- Duplicate a Track by clicking on a Track Name with the Duplicator .
- Erase a Track by clicking on a Track Name with the Eraser. A requester asks you to verify the operation.

The Thru/Play Only/Mute Selector



Like the Tracks window, the Thru/Play Only/Mute faucets line up vertically on the right of the Sequence Display. Click on each faucet to toggle through the three options.

Notice that the status of the Thru/Play Only/Mute faucet on each Track is identical to the Tracks window.

Output Tool



The Output Tools display to the right of the Thru/Play Only/Mute selector. You can:

- Double-click on the Output Tool to open its Control window.

CHAPTER TWENTY-EIGHT

- Click, drag, and drop the Output Tool to copy it to another Track, replacing the Output Tool that was there previously.

The Command Buttons

Magnifying Glass



The Magnifying Glass opens an Event window which displays information on the highlighted event in the Sequencer Display. The Magnifying Glass can be used in conjunction with all other mouse modes.



The following parameters can be edited in the Magnify window:

Event

Event displays either the event's Hit List name or, if there is no Hit List name for the note, the event's note name. Editing this actually changes the note value of the event. Notice that the Note: parameter changes whenever this changes, indicating which note the Hit is mapped onto.

Start

Start indicates the event's start time in measures, beats, and clocks.

HMSF

HMSF indicates the event's start time in hours, minutes, seconds, and frames.

End

End indicates the duration of the event time in measures, beats, and clocks.

HMSF

HMSF indicated the event's end time in hours, minutes, seconds, and frames.

Note

Note displays the event's Note value. Editing this changes the Hit name, since that also connects to the Note value.

Velo:

Edit the event's Note velocity value. Most Media Madness Tools ignore note velocity.

NOTE → Don't forget to press the return key to finalize the entry.

The Pencil (F1 Key)



The Pencil creates new Tracks and Media Madness events.

The Pencil operates in two ways:

1. In the Track Name area, the Pencil creates a new Track. Click once in the Track Name area to create the new Track.
2. In the Sequence Display area, the Pencil creates a new Hit event. Click in the Sequence Display area wherever you would like to create an event. A pop-up list appears, allowing you to choose which Hit event you would like to create. If there are no Hits defined for the Track, the pop-up list does not appear.

The Magic Wand (F2 Key)



Use the Magic Wand to edit Track names or alter events. The Magic Wand operates in two ways:

1. In the Track Name area, the Magic Wand opens the name requester for the Track. Use this to change the name or real-time status of a Track.
2. In the Sequencer Display area, the Magic Wand changes a Hit event into another Hit event. Click on the event you want to change with the Magic Wand. A pop-up requester allows you to select a new Hit name. If there are no Hits defined for the Track, the pop-up list does not appear.

The Hand (F3 Key)



The Hand drags Tracks or events. The Hand operates in two ways:

1. In the Track Name area, the Hand reorganizes the Track list. Click on a Track Name with the Hand, and drag it up and down to change its position relative to other Tracks.
2. In the Sequencer Display area, the Hand moves Hit and Note events forward and backward in time. It also drags their durations. To change an event time, grab the event near the its left edge, then drag and release. The event aligns with the choice in the Align with... option in the Preferences menu. To change an event duration, click near the right edge of the event and drag the duration.

CHAPTER TWENTY-EIGHT

NOTE → If the event has a very short duration, you won't be able to grab the right edge. Either Zoom In to view it closer or use the Magnifying Glass to edit the duration.

The Duplicator (F4 Key)



The Duplicator duplicates Tracks or events. The Duplicator operates in two ways:

1. In the Track Name area, the Duplicator creates a copy of the Track, its Input and Output Tools, and inserts into the next Track space.
2. In the Sequencer Display, the Duplicator creates copies of Hit and Note events. Click on the event you want to copy. While holding the mouse button down, drag the event to wherever you want to place it. The event aligns with the Align with... option in the Preferences menu.

The Eraser (F5 Key)



The Eraser deletes Tracks or removes events. The Eraser operates in two ways:

1. In the Track Name area, the Eraser removes a Track. Click on the Track name of the Track you want to remove. A requester asks you to verify that you want to remove the Track.

NOTE → Have caution when erasing an entire Track. The Undo menu option does not bring the Track back.

2. In the Sequencer Display area, the Eraser erases Note and Hit events. Hold down the mouse button and drag the Eraser over the events you want to erase.

The ToolPad



The ToolPad allows you to Toolize individual events.

Select the ToolPad to opens the ToolPad's pop-up menu. Choose the Tool you want to use. Hold down a shift key and click on the Tool in the ToolPad to open its Control window.

The mouse pointer turns into a Wrench. Hold down the mouse button and drag the Wrench over the events you want to Toolize. Remember, each Hit event is in fact a MIDI Note event, so Tool operations that change the note values may arbitrarily change the command.

The Solo/Mute Button



Clicking on the Solo button isolates the highlighted Track by muting all remaining Tracks. Clicking on the Solo button a second time mutes the selected Track and returns all remaining Tracks to their original status. Clicking on the Solo button a third time returns the Tracks to their original status.

The Media Madness Record Button



The Media Madness Record button prepares Bars&Pipes Professional to record a Media Madness file. Click once on the button to activate Media Madness recording. This installs MM Recorder Tools in all Tracks and sets them to record. Then, the next time the Sequencer rolls, the MM Recorder Tools record the performance, save it to disk, and deactivate the Media Madness Record button. Please see the Media Madness Player section for details.

The Zoom In And Zoom Out Buttons

The Zoom In button is the large note button. Click on it to enlarge the display by one step. This gives you finer control, but shows fewer measures. Often, this is very helpful if Media Madness events overlap.

The Zoom Out button is the small note button. Click on it to reduce the display by one step. This allows more measures to be displayed, at the loss of fine editing control.

The SMPTE/Music Time Button



The SMPTE/Music Time button toggles the display between measure time and SMPTE time. When in SMPTE time, the starting hours and minutes display over the Track names. The numbers over the Sequence Display indicate the elapsed Seconds. When in Music Time, the measure numbers display over the Sequence Display.

The Media Madness Player

The Media Madness Player is freely distributable software that allows you to play back multi-media sequences created with Bars&Pipes Professional and the Media Madness Recorder Tool.

NOTE → The Media Madness Player and Bars&Pipes Professional cannot be run at the same time. This is because both programs use many of the same resources.

CHAPTER TWENTY-EIGHT

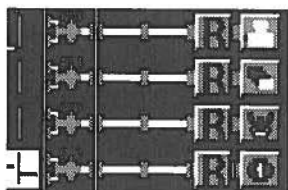
Saving Your Performance

Once you've created your performance, save it as a Media Madness performance file. To save in the Media Madness format, click on the Media Madness Record button in the Media Madness window.

The Media Madness Record button does two things:

1. It places an MM Recorder Tool in each Track at the far right of the PipeLine, just before each Output Tool. Each MM Recorder Tool records the MIDI events flowing into the Media Madness Tool. If a Track already has a MM Recorder Tool in it, the Media Madness Record command leaves it alone.
2. It activates Record mode for all MM Recorder Tools in all Tracks.

If you have the Tracks window open, notice that the MM Recorder Tools have been placed in every Track's Output PipeLine.



★ TIP ★ Alternatively, you can install the MM Recorder Tools yourself from the Tracks window. And, you can activate Media Madness Record mode by opening the MM Recorder's Control window and clicking on the Record button. For more on the MM Recorder Tool, please see the next chapter, *Multi-Media Tools*.

Click on the Start button in the Transport Controls. The MM Recorder Tools record the performance as the events pass through it.

Click on the Transport Stop button after the end of the Song. A file requester opens. Enter a filename to save your Media Madness performance. The file requester automatically appends the extension .MMP to the filename.

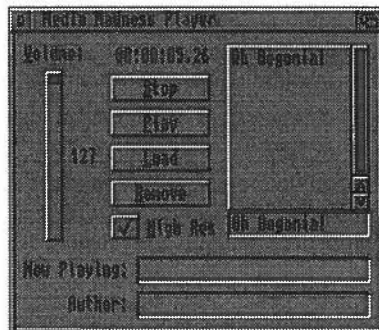
A requester then appears asking if you would like to create a data directory. If you are creating a file to be played back on a system different than your own, select Yes. This creates a directory named Data that copies all support files, animations, etc. into itself. To playback the file with the Media Madness Player, you need to have only the file itself, and the data directory and files therein.

If you are playing the file back on your own system, and know that all support files, animations, etc. are available (for instance, on a hard drive partition), you don't need to create the data directory.

NOTE → Although older Tools such as the AmigaPhone are recorded, their data is not copied into the data directory.

Running The Media Madness Player

Once you've created a Media Madness file, exit Bars&Pipes Professional and run the Media Madness Player. The Media Madness Player does not run while Bars&Pipes Professional is still running, because both programs use the same resources.



Loading The .MMP Files

Load in the .MMP files you want to perform. To do so, click on the Load button or press the 'L' key on your keyboard. Doing so brings up the load requester. Only filenames with the extension .MMP are shown in the file requester. You can load in as many files as the memory in your computer allows.

NOTE → The Media Madness Player is an AppWindow under Workbench 2.0. Workbench 2.0 users can load .MMP files by dragging the .MMP file's icon, and dropping the icon into the Media Madness Player's window.

The Titles of the loaded files appear in the scrolling list on the right side of the window. The Title shown for a file is the Title defined with the Title/ Author option in the Bars&Pipes Professional Song menu. If a Title isn't defined for a file, the filename is shown instead.

Playing An .MMP File

To play a .MMP file, click on the name of the file in the scrolling list. The name of the file appears in the box located beneath the scrolling list. Click on the Play button to play the file, the Stop button to stop the file if it is playing, or the Remove button to remove the file from memory.

CHAPTER TWENTY-EIGHT

Use the volume slider to adjust the overall volume of the piece. The volume slider works in conjunction with the volume commands (e.g. Mix Maestro) imbedded in the file, if any.

While a file is playing, its Title appears after the Now Playing: prompt, while the name of the Author, if any, appears after the Author: prompt. Please refer to Appendix A, Quick Reference, under the Song menu in the Main Menu for more information about the Title/Author option.

The High Res Button

Activating the High Res button causes the Media Madness Player to play back with a resolution of 512 parts per second. Normally, the Media Madness Player uses a resolution of approximately 60 parts per second. This uses vertical blank interrupts to control the timing. In High Res mode, the Media Madness Player uses an audio interrupt to control the timing, at the expense of taking over one of the Amiga's internal audio channels.

NOTE → If the Player is unable to reserve an audio channel, you cannot activate the High Res feature.

The Media Madness Player Window

This section explains all of the buttons and fields in the Media Madness Player. Most of these have been explained in the previous section, and are repeated here for reference purposes.

Volume Slider

Slide the volume slider up and down to adjust the overall volume of a piece. The range is from 0 (no volume) to 127 (maximum volume).

Song Position Field

The Song Position field is to the right of the Volume: slider prompt. This field shows the present location of a playing piece in hours, minutes, seconds, and SMPTE frames. The SMPTE frames corresponds to the SMPTE format which was selected when you created the .MMP file.

Stop

Use the Stop button, or press the 'S' key on your keyboard, to stop a piece that is currently playing.

Play

Use the Play button, or the 'P' key, to play the currently selected piece.

Load

Use the Load button, or the 'L' key, to load in a piece from disk.

Remove

Use the Remove button, or the 'R' key, to remove a piece from memory.

High Res

Activate the High Res button to play back at 512 parts per second, as opposed to the Media Madness Player's standard resolution of approximately 60 parts per second. This option takes over one of the Amiga's internal audio channels. If all audio channels have been taken by other applications, this option is not allowed.

Song List

The scrolling list on the right side of the window displays the currently loaded files. Click on a file in this list to make it the active piece for playing, stopping, and removing.

Active Song

The Title of the active file is displayed in the area beneath the scrolling list. Click on a file in the scrolling list to make it the active file.

Now Playing

The Title of the file which is currently playing displays in the Now Playing: field. The Title is defined in Bars&Pipes Professional using the Main menu's Song menu option, Title/Author. If a file does not have a Title defined for it, the filename is displayed instead.

Author

The Author of the file currently playing displays in the Author: field. The Author is defined in Bars&Pipes Professional using the Main menu's Song menu option, Title/Author. This field is blank if no Author has been defined.

About The Media Madness File Format

The Media Madness Files contain everything needed to recreate a complete Media Madness performance. All of the Media Madness events, whether they are musical notes or special Media Madness events are stored with their absolute times in SMPTE time.

And, the Media Madness Tools themselves are also stored in the file. These tell the Player how to perform each type of event. As a result, as new Media Madness Tools become available, you'll be able to incorporate them into your performances without requiring an upgrade of the Media Madness Player.

CHAPTER TWENTY-EIGHT

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Chapter 29

About This Chapter

As you may already know, Bars&Pipes Professional is an expandable music environment. As a result, you have the opportunity to add more Tools to your system. For instructions on how to install and use Tools, please see Chapter 7, Tools.

This chapter describes all the related Media Madness Multi-Media Tools included with your Bars&Pipes Professional release disk. Music Tools are in Chapter 26.

Format Of Tool Descriptions

Each Tool is described in a standard format, as follows:

DESCRIPTION: explains the Tool's function.

SPECIAL TYPE: identifies the Tool's special features, if any.

- An Input Tool is the first Tool on the Input PipeLine.
- An Output Tool is the last Tool on the Output PipeLine.
- A Branching Tool can connect to a Merging Tool on another PipeLine.
- A Merging Tool can receive from a Branching Tool.
- A MacroTool consists of several Tools assembled with the Create-A-Tool feature.
- A Multi-Media Tool is typically used with hit lists and the Media Madness window. Most Multi-Media Tools are also Output Tools.

USAGE: specifies the location, either the PipeLine or a ToolPad, in which a Tool can be used. Most Multi-Media Tools are designed to work in the Output PipeLine.

CONTROLS: describes the Tool's Control window. Access the Tool's Control window by:

- Double-clicking on the Tool, if it is in a PipeLine;
- Pressing a shift key and clicking on the Tool if it is in the ToolPad, or
- Using the Edit PadTool Controls menu option if the Tool is in the ToolPad.

★ TIP ★ You can even edit the Tool's Controls while the Tool is processing notes.

Many Multi-Media Tools have pop-up buttons which you can use to choose octaves, notes from a keyboard, etc. Drag the mouse to the selection you want and release the mouse button.

CHAPTER TWENTY-NINE

Most Multi-Media Tools share an important characteristic: Hit List Translation tables. A Hit List Translation table is a list of MIDI notes with commands that correspond to each note.

The majority of Multi-Media Tools' Control windows display a scrolling list of MIDI note to command translations. Here you can click on a MIDI note to select it, then enter the command for that note. The Tool executes the specific command whenever the note enters it. And, it places the name of the command in the Hit List translation table for the Media Madness Track.

Many Tools also provide a Label option for each command. Media Madness displays the label, if it exists. Use this wherever the command may seem too cryptic to understand directly, as is often the case with ARexx commands.

CONSIDERATIONS: many Tools also have tips and examples to help you get the most out of using the Tool.

Tool Listing

The following section describes each Media Madness Tool individually. Although some Tools are mentioned in other parts of the manual, this chapter contains the most detailed information on a particular Multi-Media Tool.

ANIMaI



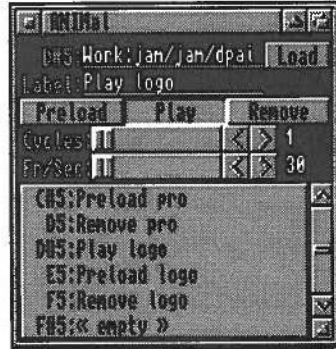
DESCRIPTION: The ANIMaI Tool performs Amiga ANIM animation files. In conjunction with the Media Madness window, you can use the ANIMaI Tool to create an animation Track synchronized with your Bars&Pipes Professional composition. You can insert commands to preload, play, and remove animations in the Media Madness time line or interactively command the ANIMaI Tool from your MIDI keyboard, playing notes to switch from one animation to another.

Animations require a reasonable amount of time to load from disk before playback. Once an animation loads, it makes sense to keep it in memory and perform it multiple times before removing it. To accommodate these requirements, the ANIMaI Tool provides three commands: PreLoad, which preloads an animation, Play, which plays the animation, and Remove, which removes it when done. Use the Media Madness Control window to install an animation file and assign three MIDI notes to to these three commands. Bars&Pipes Professional's Hit List translation mechanism converts these three notes into named options in the Media Madness window.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the ANIMAl Tool's Control window to install ANIM files and assign PreLoad, Play, and Remove animation commands. Like most Media Madness Tools, the Control window displays a list of all MIDI notes with the currently selected note and its ANIM assignment above the list.



Command List

The scrolling list displays each MIDI note and the associated ANIMAl command. Click in the list to select a note. Use the scroll bar on the right side of the list to access notes which are above or below the visible range.

Note Assignment

The top line displays the MIDI note and associated ANIM file. Define the ANIM file to load by typing the file name directly after the prompt. Remember, though, if the file does not exist or is misspelled, ANIMAl will not load it.

Load

When you click on the Load button, the file requester opens. Find the animation you want to use, and Load it. Doing so automatically assigns the Play animation command to the note you've selected, the Preload command to the next free note, and the Remove command to the next free note after that. ANIMAl automatically advances to the next free note to prepare for another Load operation.

Label:

To make the Hit names easier to read in the Media Madness window, assign a Label to each command. Type a short descriptive name after the Label: prompt.

CHAPTER TWENTY-NINE

PreLoad, Play, & Remove

The PreLoad, Play, and Remove buttons identify the type of command ANIMal assigns to the currently chosen MIDI note. To assign the note to a different command, reassign it by clicking on the appropriate button.

Sometimes, you might need to install an animation and assign just one of the three commands. First click on either Preload, Play, or Remove, then click on the Load button. Select the ANIM from the file requester. This installs only the selected command on the highlighted note, and does not install the other two commands on subsequent notes. However, make sure to assign all three commands to each ANIM file.

Cycles:

Available only for the Play command, the Cycles slider controls how many times the animation plays. Set it to Inf. for infinite repeat. Otherwise, the slider ranges from 1 to 100 cycles.

Fr/Sec:

Also only available for the Play command, the Fr/Sec slider sets the frames per second rate of the animation. The maximum is 30 frames per second, the minimum is 1 frame per second.

There are also three menu options:

Clear List

To remove all PreLoad, Play, and Remove items, select the Clear List command in the menu. This clears the entire Hit List translation list leaving all 128 MIDI note assignments empty.

Load List...

To load a previously saved ANIMal set of PreLoad, Play, and Remove commands, select the Load... command.

Save List...

To save the current list of commands, select Save List... in the menu.

CONSIDERATIONS: Before building an animation Media Madness Track, remember the following:

1. You'll need to know how long it takes to preload an animation file. It is faster to preload an animation from RAM: than it is from a hard disk, and it's faster to preload from a hard disk than it is from a floppy disk.
2. You can find out how long it takes to preload an animation from a disk drive by sending the PreLoad command and watching the drive light. When the drive light turns off, the animation is done preloading.

★ TIP ★ If you send another PreLoad command before the previous PreLoad command is finished, loading time is increased even further. It is best to wait until one file is done preloading before attempting to preload another.

3. You'll also need to know how much memory a preloaded animation takes. When the animation actually plays, even more memory is consumed by the animation screen. Just about the only way you can be sure that you have enough memory to preload an animation is to try. If you run low on memory while preloading, the PreLoad command aborts.

ANIMAl does not preload the same file twice, nor attempt to remove it twice. It ignores commands to do so. Furthermore, ANIMAl does not attempt to play an animation which hasn't been preloaded.

If an animation has not finished preloading when ANIMAl receives the command to play, it plays the animation as soon as the preloading procedure finishes. If there is not enough memory for an animation to preload or play, the command is canceled.

ANIMAl removes an animation from memory when it receives a remove command, or when STOP is pressed in the Transport Controls.

If ANIMAl cannot find an animation file because the file does not exist on the selected volume, ANIMAl ignores commands dealing with that particular animation. On the other hand, if ANIMAl cannot find the selected volume, the operating system automatically brings up a warning requester.

Example: Playing An Animation

1. *Open the Media Madness window.*
2. *Drop the ANIMAl Tool on the right side of Track 1.*
3. *Double-click on the ANIMAl Tool to open its Control window. Observe that C5 is the default highlighted note.*
4. *Click on the Load button*
5. *Find your animation in the file requester. Let's assume that we have an animation file called "Egg Drop" in the df0: directory.*
6. *Load "df0:Egg Drop". The note C5 has the command to Play one cycle of the animation at 30 frames per second. The note C#5 was the command to Preload, and D5 has the command to Remove.*
7. *Close the ANIMAl Control window.*
8. *Use the Pencil in the Media Madness window to enter Preload Egg Drop at measure 1.*

CHAPTER TWENTY-NINE

9. Enter *Play Egg Drop* at measure 10, to give the *Preload* command time to execute.
10. Enter *Remove Egg Drop* at measure 20. This clears the animation from memory.
11. Hit *Start* on the *Transport Controls* to see your animation.

NOTE → CAUTION: If you click with the mouse on the animations screen while an animation is playing, the animation screen becomes the active screen, and *Bars&Pipes Professional* does not receive a *Stop* command from the keyboard *Enter* key. If this happens, *Bars&Pipes Professional* still stops when it reaches the *Stop* flag. If you want to stop it sooner, use the *Amiga-M* combination to scroll through the screens, or drag the animation screen down to access the *Bars&Pipes Professional* screen.

When *Bars&Pipes Professional* reaches the *Remove* animation command, the animation screen closes.

Command Performance



DESCRIPTION: The Command Performance Tool sends commands to ARexx ports, files, and devices such as SER:, CON: device, etc.

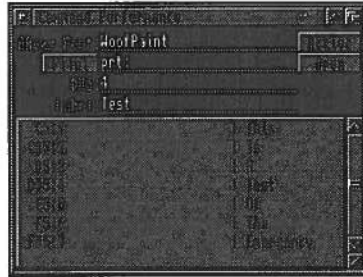
Use Command Performance with *Media Madness* to control other hardware and software devices either through ARexx or by sending text strings. For example, you could control a particular laser disk player by sending text messages to the serial device.

- ★ **TIP** ★ The *One-Stop Music Shop* soundcard provides a *MIDI* interface separate from the serial port. This frees the serial port to be used by other applications and devices.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the Command Performance Control window to assign commands to notes.



ARexx Port

If you want to send the output to an ARexx port, enter the name of the ARexx port after the ARexx Port: prompt, and click on the Active button.

File or Device

If you want to send the output to a file or device, enter the name of the file or device after the File: button, and click on the Open button to open the file. Or, click on the File: button to bring up the file requester to choose the output file.

NOTE → As long as the Open button is active, the file is kept open and is not accessible by other applications.

Command List

The scrolling list displays all 128 MIDI notes and the corresponding commands. Highlight the note you want to work on in the scrolling list, then fill in the two fields above the list.

Note Assignment

Enter the command you want to send after the Note value: prompt. To enter a control character, type a less than sign, the ascii value, and then a greater than sign. For example, <3> sends out the ascii value 3, and <10><13> sends out a string of two ascii values corresponding to the linefeed and carriage return characters.

Label:

Enter an optional description after the Label: prompt. Use this if the command is obscure and hard to understand in the Media Madness window.

Command Performance also contains three menu items:

Clear Commands

Clear Commands clears all commands and Hit List labels from the Tool.

CHAPTER TWENTY-NINE

Load Commands...

Load Commands... loads a list of commands and Hit List labels previously saved.

Save Commands...

Save Commands... saves the current command list to disk.

CONSIDERATIONS: To help debug ARexx, activate sending to File at the same time. Command Performance then writes all ARexx commands to file in addition to transmitting them.

FreezeFrame



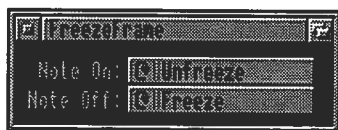
DESCRIPTION: The FreezeFrame Tool freezes and unfreezes the picture in picture (PIP) generated by the GVP Impact Vision IV-24 card. Use FreezeFrame to strobe video to music.

Freeze Frame

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Two buttons control the operation of the FreezeFrame Tool. By default, when FreezeFrame receives any Note On event, it freezes the PIP, and when it receives any Note Off event, it unfreezes the PIP.



To toggle the operation of the Note On and Note Off events, click on the corresponding button. Choose between Unfreeze, Freeze, Toggle, and Ignore. In Toggle mode, the FreezeFrame Tool toggles the frozen status of the PIP when it receives the event.

- ★ TIP ★ The PIP Accessory activates the IV-24 picture in picture feature on the Bars&Pipes Professional screen.

CONSIDERATIONS: To use FreezeFrame with a music Track, place FreezeFrame in an empty Track. Place a Branch Out Tool in the music Track and connect it to a Merge In Tool in the FreezeFrame Track. While music performs via the MIDI Out connector in the music Track, FreezeFrame freezes the video to each note.

For Media Madness compatibility, FreezeFrame creates just one Hit List command: "FreezeFrame." Once you've placed FreezeFrame in a Track, the FreezeFrame command is immediately available in the Media Madness window. Use it to place a Freeze in the Track. Drag the length of the event with the Hand to set the duration before it unfreezes. When you change the Note On: and Note Off: parameters in the FreezeFrame Control window, you control the behavior of this event.

G-LOCKenspiel



DESCRIPTION: The G-LOCKenspiel Tool sends commands to control the GVP G-LOCK genlock unit. The G-LOCK hardware plugs into the Amiga's video port and mixes and filters both video and audio signals, all under software control. Use the G-LOCKenspiel Tool to control these effects.

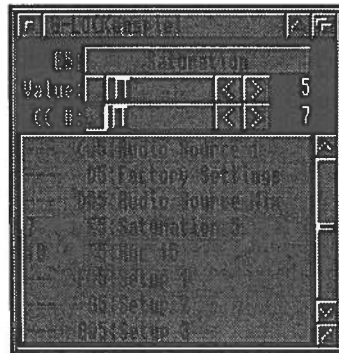
G-LOCK commands range from controlling the hue and saturation of the video signal to setting audio bass to switching to a complete preset G-LOCK configuration. Accomplish all of these and many more via real-time control in Media Madness.

NOTE → Please read your G-LOCK manual for a complete description of the G-LOCK capabilities and options.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Like most Media Madness Tools, the G-LOCKenspiel Tool assigns one MIDI note to each special effect. Use the G-LOCKenspiel Tool's Control window to assign up to 128 MIDI notes to effects..



CHAPTER TWENTY-NINE

Command List

The bottom portion of the window displays the Command List. This displays all 128 MIDI notes and corresponding G-LOCK command assign to each. To select a note/command, click on it in the list. The values above the list update to display the parameters of the selected note and command.

Note Assignment

The top button displays the selected note and the corresponding G-LOCK command. Click on the command button to the right of the note to select the command of your choice from the scrolling list of available G-LOCK commands.

Value:

Some commands require an additional parameter. For example, Contrast requires a numeric setting. To choose which value you would like to set with the command, use the Value: slider. Click on the checkmark button to the left of the slider to enable the setting.

CC#:

Some commands can be continuously changed over time. Volume, Bass, Saturation and Hue are all commands do well when controlled by a modulation wheel or Mix Maestro. To assign the command to a control change, activate the checkmark after the CC# prompt and dragging the slider to the appropriate Controller number.

NOTE → You can set up a command to be controlled by a Controller but not by a note. Do so by activating the checkmark after CC# but not after Value.

Like many Media Madness Tools, you can load and save the Command List from the G-LOCKenspiel Control window's menu:

Clear List

Clear List removes all commands from the List.

Load List...

The Load List... command loads in a previously saved list.

Save List...

The Save List... command saves the current list to disk.

Last Slide Show, The



DESCRIPTION: The Last Slide Show displays IFF slides or pictures, such as those created with Deluxe Paint.

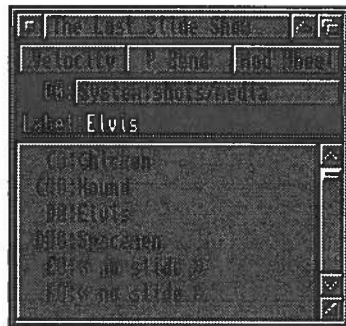
When the Last Slide Show Tool receives a note, it checks its internal list to see if an IFF slide has been assigned to that note. If so, it displays the slide. It stops displaying the slide when it receives a MIDI Note Off event for the Note On event that triggered the slide.

The Last Slide Show optionally uses Note One velocity and Modulation Wheel to control the brightness of a slide and Pitch Bend to shift the colors.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: The Last Slide Show Tool must know which slide to play when it receives a particular note. It also must know whether to listen to velocity, pitch bend, and modulation wheel. To set these parameters, open the Control window:



Velocity

If you would like the initial velocity of all notes to determine the brightness of all slides, activate the Velocity button.

P Bend

If you would like Pitch Bend events to shift the colors, activate the Pitch Bend button .

Mod Wheel

If you would like the Modulation Wheel (Control Change #1) to change the brightness dynamically, activate the Mod Wheel button.

Command List

The Command List displays all 128 MIDI notes and the pictures you attach to each one. Click on a note to activate it and display it in the Command filed just above the list.

CHAPTER TWENTY-NINE

Note Assignment

After choosing a note, click on the button after the Note: prompt. (The Note: prompt has the name of the note displayed, for instance, C5:.) The Load Slide: file requester appears. Find the slide you would like to assign and load it. The name of the slide appears after the prompt.

The Last Slide Show Tool has three menu commands. These control loading, saving, and removing the entire command list:

Clear Slides

Clear Slides removes all slides from the Command List.

Load Slides...

Load Slides loads in a previously saved list of assignments.

Save Slides...

Save Slides saves the current list of assignments.

CONSIDERATIONS: The Last Slide Show Tool needs a small amount of time to load in the IFF slide before displaying. Slides placed right at the start of the performance may not display immediately. Where possible, The Last Slide Show keeps the images stored in memory. In this case, the second time you run the performance, most delays disappear.

★ **TIP** ★ Drag The Last Slide Show into the Metronome window, install an image in it, and use it as a visual metronome!

MediaPhile Controller



DESCRIPTION: The MediaPhile Controller Tool is used with the MediaPhile Desktop Video System from Interactive MicroSystems, Inc. The MediaPhile Controller issues all of the standard MediaPhile video tape transport control commands, including start, stop, and locate.

NOTE → The MediaPhile library must be installed on your system for the MediaPhile Controller Tool to load.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the MediaPhile Controller Tool's Control window to assign MediaPhile commands to notes.



Command List

The Command list display all 128 MIDI notes and the MediaPhile commands assigned to each. Select a note/command by clicking on it in the list. The note, command, and command parameters display above the list.

Note Assignment

Click on the button after the Note: prompt. A pop-up list of commands appears. Select the command that you want to assign, and lift the mouse button. The next note in the list automatically highlights.

Position:

Enter a SMPTE time in the format 00:00:00.00 after the Position: prompt if the command requires it.

MM Recorder



DESCRIPTION: The Media Madness Recorder creates a file that can be used with the Media Madness Player. Fortunately, you rarely need to use this Tool directly. Instead, the Record button in the Media Madness window automatically places a Tool in each PipeLine and initiates recording. However, if you'd like more complete control, you can do it yourself with the MM Recorder Tool:

Place an MM Recorder Tool in *every* PipeLine, directly before the each Output (usually Media Madness) Tool.

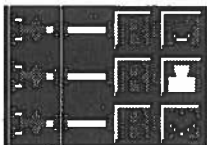
When you activate MM Recording, each MM Recorder Tool records the performance flowing through it. They then collect all events and save the Media Madness file for performance by the Media Madness Player.

USAGE: PipeLine.

CONTROLS: To use the Media Madness Recorder Tool, first put a copy of the Media Madness Recorder Tool in the output PipeLine of each Track you

CHAPTER TWENTY-NINE

want to include in your recording. Place each Recorder Tool just before the Output Tool in each Track, i.e., just to the left of the MIDI Out Tool.



Once you've placed each Recorder Tool, double-click on one of them to open its Control window.

NOTE → All Media Madness Recorder Tools share the same Control window. When you set the controls for one Tool, you are setting them for all Tools.



Record

When you are ready to create your file, activate the Record button. In doing so, all notes that flow into the Recorder are recorded when the Transport Control's Play button is pressed.

In: & Out:

The In: and Out: buttons allow you to set optional punch in and punch out points. If these buttons are activated, the Media Madness Recorder captures notes only during the time specified between the In: time and Out: time fields.

If In: is active, but Out: is not, the Media Madness Recorder records all notes after the In: time until the sequence is over or you press the Transport Control's Stop button. If Out: is active, but In: is not, the Recorder starts recording as soon as you press Play, and stops recording when it reaches the Out: time.

If neither In: nor Out: is active, the Recorder records all notes as soon as you press the Play button in the Transport Controls and stops either when the sequence is over or the Stop button has been pressed.

You can manually adjust the In: and Out: times by clicking on them and entering the new values. Alternatively, you can position the Song Position Flag to a location and click on the Flag button after the In: or Out: prompt.

Doing so automatically sets the value after the In: or Out: prompt to the position of the Song Position Flag.

Once you press the Stop button in the Transport Controls, a file requester appears. Enter a filename for your multi-media performance file. The filename that you enter automatically contains the extension .MMP.

After you've entered a filename for your multi-media performance, a requester then appears and asks if you would like to create a data directory:

- If you are creating a file to be played back on a system different than your own, select Yes. Doing so creates a directory named Data where Bars&Pipes Professional copies all support files, animations, etc. necessary to play your multi-media performance. To playback the file with the Media Madness Player, you need the .MMP file and the files contained in the data directory.
- If you are playing the file back on your own system, and know that all support files, animations, etc. that you are accessing are available, you don't need to create the data directory.

POD People

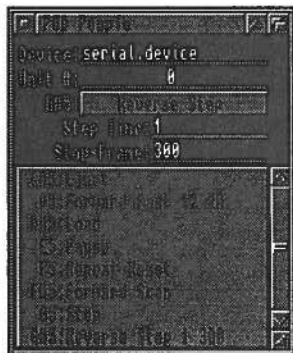


DESCRIPTION: The POD People Tool sends commands to control the Panasonic Optical Laser Disk Player.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the POD People Tool's Control window to assign laser disk commands to notes.



CHAPTER TWENTY-NINE

Device:

Select which device communicates with the Panasonic Optical Disk. By default, the standard Amiga serial device is used as the output device. If you intend to use a serial port card, enter its device driver name.

Unit #:

If you are using a multi-port serial card, select which output to use in the Unit # field.

Command List

Like most Media Madness Tools, the lower portion of the Control window displays a list of MIDI notes and corresponding POD commands. To edit a note/command, activate it by clicking once on it in the list.

Note Assignment

The note name appears as a prompt to the left of the Command button. Click on the Command button to open a scrolling list of available commands.

Parameters

Some commands require additional parameters, some do not. If additional parameters are required, one or both of the prompts beneath the note prompt provide an area to input the parameter. If 'No Parameter' displays, none is needed.

Three additional menu commands let you clear the entire list, as well as load and save presets.

Clear List

Clear List erases all commands, leaving a list of 128 blank MIDI notes.

Load List...

Load List reads a previously saved configuration from disk.

Save List...

Save List... saves the current set of commands to disk.

Punching Bag



DESCRIPTION: Unlike all other Media Madness Tools, Punching Bag is an Input Tool. Use it to enter Media Madness events in real-time, as well as test regular Media Madness Tools.

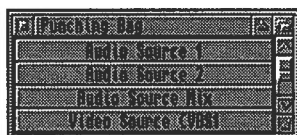
Punching Bag's Control window displays a series of buttons, each representing an available Media Madness command. Press on a button to

send the corresponding note/command down the PipeLine, through the Sequencer and out the destination Media Madness Tool.

SPECIAL TYPE: Input.

USAGE: PipeLine.

CONTROLS: If the Track does not have a set of Hit List translations (notes and corresponding commands,) Punching Bag's Control window does not open. To install Hit List translations in the Track, place a Media Madness Tool in the Track, open its Control window, and assign commands to notes.



Once a Track has a Hit List translation table, Punching Bag's Control window displays a separate button for each command. Click the button whenever you want to send a hit down the PipeLine. If there are too many buttons to display, Punching Bag's Control window adds a scroll bar on the right side. Scroll up and down to access the other commands.

SamplePhone



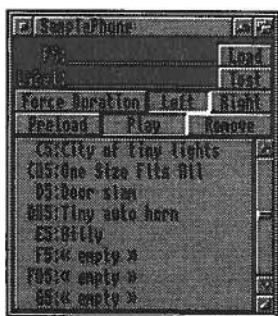
DESCRIPTION: The SamplePhone Tool plays back 8-bit IFF sample files. Assign up to 128 samples to a SamplePhone Tool, one sample per each of the 128 MIDI notes. Each can be of any length, and each plays back at the sample rate that the original sample was recorded. However, because it is designed for playing sound effects and not musical notes, the SamplePhone does not support loop points or pitch shifting.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the SamplePhone Tool's Control window to assign commands to notes. Here you can assign commands to PreLoad a sample into memory, play a sample out of the left or right side of the Amiga's stereo output, and remove a sample from memory. Optionally, you can assign the entire sample to playback, or end the sample with a Note Off command.

CHAPTER TWENTY-NINE



When you first open the SamplePhone Tool's Control window, the note C5 is highlighted, and the Left and Play buttons are active.

The Command List

Like most Media Madness Tools, the lower portion of the Control window displays a list of MIDI notes and corresponding SamplePhone commands. To edit a note/command, activate it by clicking once on it in the list.

Note Assignment

Once you've selected a note in the Command List, the note name displays in the top of the Control window followed by the sample's file name. If you already know the filename and path, you can type it in manually after the prompt. The Load button is provided to make the process easier.

Load

Click on the Load button to find a sample file on disk. The file requester opens. Locate the sample file and load it. The filename displays after the note prompt.

Label:

You can enter an optional label after the Label: prompt. If you provide this label, the Media Madness window uses it instead of the actual filename.

After assigning a sample to a note, you can set a variety of parameters.

Play

Click on the Play button to assign the Play command to the sample. By default, each note initializes to Play the sample. In the Media Madness window, place this command wherever you would like the sample to play.

PreLoad

In order to perform a sample, SamplePhone must first load it into memory. It automatically attempts to load in the sample before the sample's playback time. However, longer samples or samples loaded from slow media such as

floppy disk may need extra preloading time. The Preload button provides this ability.

To use Preload, assign the same sample file to two different notes. For one of the notes, highlight the Preload button. For the second, highlight the Play button. In the Media Madness window, place the Preload command well before the Play command to insure that the sample has adequate time to preload into memory.

Remove

Once a sample has been loaded into memory, it stays in memory until Bars&Pipes Professional stops. In low memory situations, it's desirable to flush the sample out of memory after it plays. To do so, create a Remove command:

Once you've assigned a sample file to a Play command, assign the same sample file to another note. Click on the Remove button, creating a Remove command for the same sample. Place this command in the Media Madness window at the point that you want to remove the sample from memory.

Force Duration

Normally, the entire sample plays, regardless of the duration of the command. If you would like to only play part of the sample, click on the Force Duration button. This forces the sample to stop at the end of the command in the Media Madness window.

Left & Right

You may want to play a sample out of either the left or right side of the Amiga's stereo output. The Left button indicates that the sample should play out of the left side of the Amiga's stereo output. If you would like the sample to play out of the right side, click on the Right button instead.

The SamplePhone attempts to play the sample out of the correct side. If there is not an audio channel available on that side, it attempts to play out of the other side instead.

Test

To hear the sample immediately, click on the Test button. The sample automatically preloads and plays.

The SamplePhone's menu commands allow you to clear, load, and save the Command List:

Clear List

Clear List erases the entire Command List. Use it to start with a clean slate.

Load List...

Choose Load List to load a previously saved list from disk.

CHAPTER TWENTY-NINE

Save List...

Choose Save List to save the Command List to disk.

Scala



DESCRIPTION: The Scala Tool controls a Scala performance from within Media Madness. In conjunction with the Scala software package, it loads and performs Scala scripts.

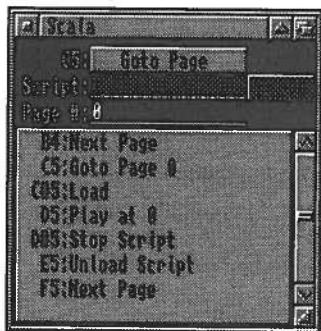
To use this Tool, you must put the LINK file in the Scala startup drawer.

NOTE → We have provided the LINK file on disk. Please refer to your Scala manual for more information.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the Scala Tool's Control window to assign Scala commands to notes.



Command List

The scrolling list displays all 128 MIDI notes and the corresponding Scala commands. Highlight the note you want to work on in the scrolling list, then fill in the three fields above the list.

Note Assignment

Select the Scala command by clicking on the button after the note prompt. A list of commands appears. Select the command from the following choices:

- Goto Page tells Scala to jump to a specific page in the script. Enter a page number after the Page #: prompt.

- Load Script tells Scala to load a Scala script. Enter the script name and directory path after the Script: prompt. Or, click on the Load button. A requester appears. Use this requester to pick the script you want to load.
- Next Page tells Scala to move forward to the next page in the script.
- Play Script tells Scala to start performing the script. You must enter the starting page number after the Page #: prompt.
- Stop Script tells Scala to stop performing. It requires no additional parameters.
- Unload Script tells Scala to release the Script from memory.

The Scala Tool includes the standard Media Madness menu options:

Clear List

Clear List removes all commands from the list.

Load List...

To load a previously saved set of Scala commands, select the Load List menu command.

Save List...

Save List... saves the current command list.

SunRize Out



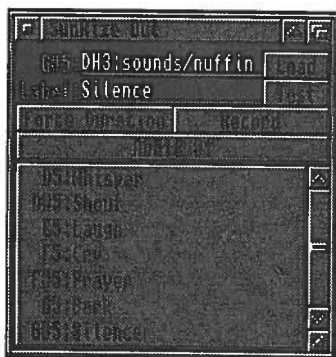
DESCRIPTION: The SunRize Out Tool translates MIDI note events into samples to play out of the SunRize digital audio cards. You can assign a different sample to each of the 128 MIDI notes. In addition, you have the option of playing each sample to its full duration or stopping playback when a Note Off is received.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Open the SunRize Out's Control window to assign MIDI Notes to sampled sound files.

CHAPTER TWENTY-NINE



Command List

The scrolling list displays all 128 MIDI notes and the corresponding sampled sound file. Highlight the note you want to work with in the scrolling list.

Note Assignment

Assign each note to a sample file. The sample file name displays to the right of the note name in the top line. Enter a file name by typing after the prompt or clicking on the Load button.

Load

The Load button opens the file requester. Use the requester to choose the sample to assign to the note.

Label:

If the file name is long or cryptic it's hard to use in the Media Madness editor. Enter a short descriptive name after the Label: prompt. Media Madness uses the label name instead of the sample file name.

Test

The Test button plays the currently selected sample.

Force Duration

Force Duration button, when depressed, chops all samples to fit the durations of the note that activates them. Otherwise each sample plays out in its entirety, regardless of note length.

Record

To record a sample, click on the Record button. This opens the Studio16 Recorder module. Use the module to record a sample file.

This button is provided as a convenient way to record new samples without having to load the entire Studio16 environment.

Driver (AD1012)

The Driver button displays the current SunRize device driver used to perform samples. If you have more than one SunRize card, click on this button to bring up a scrolling list of all available drivers.

CONSIDERATIONS: SunRize Out is sensitive to both velocity and Control Change 7 (Volume) for determining the volume of the sample. Use each trigger note's velocity to set an initial volume and use Mix Maestro to set a continually changing volume. When used with the AD516 board, Control Change 10 (Panning) determines the panning of the sample.

SuperGen



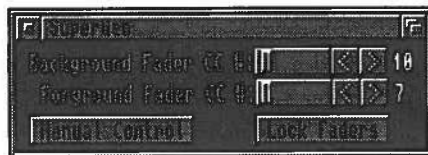
DESCRIPTION: The SuperGen Tool controls the SuperGen genlock. This Tool requires the SuperGen 2000 libraries in order to install and run. Please contact Digital Creations for the latest version.

Unlike most Media Madness Tools, the SuperGen Tool does not assign MIDI notes to settings and it does not create a set of Hit names for the Media Madness window. Instead, it uses MIDI Controller messages to set the positions of the two faders on the SuperGen box.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Open the SuperGen Control window to set the controller numbers for the two faders.



Background & Foreground Fader CC #:

Drag the two Fader CC# slider to set which MIDI controllers position the two faders. By default, they are set to the Volume and Pan control numbers, so you can easily control your SuperGen performance from Mix Maestro.

Lock Faders

Set the two faders to drag in sync by activating the Lock Faders button.

CHAPTER TWENTY-NINE

NOTE → With the faders locked, be sure to have only one continuous controller active, or both faders jump back and forth between the two controller values.

Manual Control

Every time the SuperGen Tool sends a command to the SuperGen box, the manual faders on the SuperGen box disengage to avoid overriding the software controlled fading. To return control to the manual faders, click on the Manual Control button.

Toasty

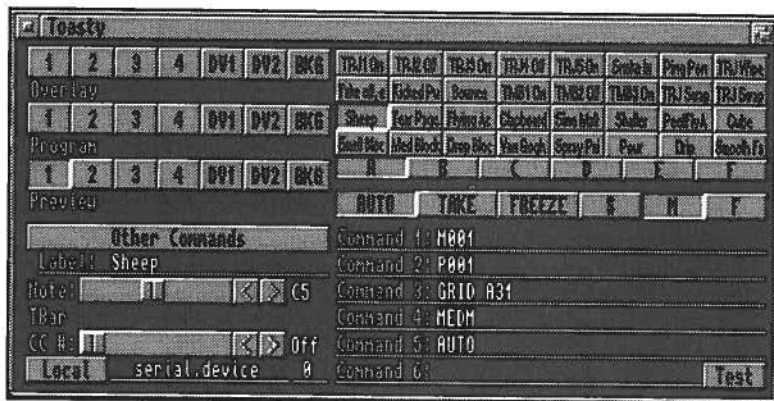


DESCRIPTION: The Toasty Tool controls the NewTek Video Toaster. Use it to control Toaster transitions in sync with the rest of your Media Madness presentation.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: Use the Toasty Tool's Control window to set up Toaster control and assign Toaster commands to MIDI notes.



Local/Remote

The Local/Remote button in the lower left corner determines whether Toasty transmits commands via ARexx to a local Video Toaster in the same Amiga as Bars&Pipes Professional or via a device to a remote Video Toaster in a second machine.

NOTE → For Toaster transitions to work properly, the switcher screen must be activated (see the "Always Force Switcher To Front" menu command.)

If you choose Remote, enter the name of the AmigaDOS device to use for communication. The default choice is the serial device. If the device has more than one connector, choose the appropriate one by typing in a unit number to the right of the device name. Toasty sends the Toaster ARexx commands to the second machine via the selected device.

The second machine must be set to receive the Toaster commands. Run the Toasty Remote program command on the second machine.

TBar CC#:

If you'd like to control the Toaster TBar with MIDI Controller events, drag the TBar CC# slider to set the controller number. If you choose 7, you can use the volume slider in Mix Maestro to control Toaster fades.

Note:

Unlike most Media Madness Control windows, the Toasty Control window, for lack of space, does not display a complete list of MIDI notes and corresponding Toaster commands. Instead, drag the Note: slider on the left side to select a note. Once you've selected a note, you may prepare up to six Toaster commands to send with the one note.

Label:

Like many other Media Madness Tools, assign a descriptive label to each note by typing after the Label: prompt. The Media Madness window uses the label names to display the Toaster commands.

Command #

Each note can have up to six Toaster commands associated with it. For instance, one note might trigger commands to set up the Program and Preview inputs, set the transition to "Shatter" and perform the transition with the "AUTO" command.

Enter command either by typing it in or by selecting the command field, then clicking on the appropriate Toaster Control button.

Toaster Controls

All of the remaining buttons, with the obvious exception of the Test button, represent Toaster commands. These should be familiar to Toaster users.

To assign a set of Toaster commands, click on each, one by one. Notice that the Command fields fill one by one with the appropriate ARexx Toaster command.

To go back to a Command field and change it, click on the field, then either enter the preferred command or click on the command in the window.

CHAPTER TWENTY-NINE

Other Commands

The Other Commands button contains a list of additional Toaster Controls. Click down on the button to reveal a scrolling list of Toaster commands.

Some of the commands in this list require you to set a parameter. Once you select the command, it displays the parameter in angled brackets after the command name. For instance, 'Change Clip Level' requires you to enter a Clip level from 0 to 257. Do so by deleting everything from the < to the > sign (including the signs themselves), and replacing them with the number of your choice.

Test

To audition the set of commands, click on the Test button. Remember, you must have the Switcher to Front option activated for the Toaster to perform.

The Toasty Tool also has a short set of menu options:

Load Project...

The Load Project menu command allows you to load in Projects created with the Toaster software. Projects define the button layouts for Toaster Transitions. When you load in a project, the names on each button change to reflect the new project.

Clear List

The Clear List menu command clears the Arexx commands and labels from all notes in the Toasty Tool.

Load List...

The Load List... menu command loads in previously saved Toasty Tool command lists.

Save List...

The Save List... menu command saves your command list of Arexx commands and labels.

Always Force Switcher To Front

The Always Force Switcher To Front menu command causes the Toasty Tool to bring the Toaster screen to the front before executing the commands, and to bring the Bars&Pipes Professional screen to the front after executing the commands.

CONSIDERATIONS: The Video Toaster disables all multitasking during most effects. As a result, the rest of your Bars&Pipes Professional performance turns off during Toaster transitions. This is only a minor nuisance when recording and orchestrating your performance. Mute the Toaster Track as you work on others.

When it comes time to record the performance, there are two solutions:

1. Use two Amiga computers, one running Bars&Pipes Professional and the second running the Toaster. Set the Local/Remote button to Remote and set the device to the serial port. To continue performing MIDI, either use an additional serial port card, or use the One-Stop Music Shop for MIDI performance and communication. On the Toaster machine, run the Toasty Receive program. Toasty Receive reads the commands coming in the serial port and converts them into ARExx messages for the Toaster.
2. Run Toasty in the same machine as the Video Toaster. Set the Local/Remote button to Local. Synchronize Bars&Pipes Professional with an external SMPTE source (Blue Ribbon's SyncPro SMPTE to MTC interface works well.) Perform two recording passes, first with the Video Toaster effects to video, then a second pass to drop in audio.

Yak



DESCRIPTION: The Yak Tool sends output to the Amiga's internal speaking device, allowing you to integrate the Amiga's corny speech capabilities into your Bars&Pipes Professional/Media Madness creations.

SPECIAL TYPE: Output, Multi-Media.

USAGE: PipeLine.

CONTROLS: The Yak Control window is quite simple.



Control List

Most of the Control window displays the list of MIDI notes and associated text. Click on a note to activate it for editing.

Note Assignment

Type spoken text after the note prompt on the top line. This assigns the words to the selected note. When Yak receives the note, it speaks the words.

CHAPTER TWENTY-NINE

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Chapter 30

Overview

This chapter focuses on defining Scales, Chords, Rhythms, and Patch Lists in their respective Define windows. Many Tools and Sequencer functions use these items to produce customized results. For instance, the Quick Patch Tool and the Program Change area use Patch Lists, so that you can choose program changes by name. The CounterPoint Tool uses Scales to compose and the Accompany B Tool uses Chords and Rhythms to create auto-accompaniments.

Bars&Pipes Professional stores Scale, Chord and Rhythm information in each Track's Song Parameters. To choose a particular Scale, Chord or Rhythm, use the Pencil in either the Master Parameters or a specific Track's Song Parameters.

Bars&Pipes Professional saves your Scales, Chords, Rhythms, and Patch Lists with each Song. When Bars&Pipes Professional loads the Song, these additional items load with it.

- ★ TIP ★ To Include new Scales, Chords, Rhythms and Patch Lists in your New environment, select New from the Song menu, add the new Items, then select Save As Default in the Song menu.

The Define windows can be reached from either the Define... option in the Main menu set's Windows menu, or the Edit window's Define menu.

Define Scales Window

To create your own Key & Scale/Modes, use the Define Scales window.



The Define Scales window has a keyboard area, a name area, three buttons, and two menu options.

Adding And Subtracting Notes From Scales

On the right side of the Define Scales window is a one octave keyboard. Active notes are highlighted in blue, while inactive notes are white. To

CHAPTER THIRTY

include a note in the scales, click on a white note, thereby turning it blue. Click on a blue note to disclude it from the Scale, thereby turning it white.

Creating A New Scale

Click on the Add button to create a new Scale. Then, enter a name after the Name: prompt. Click and highlight the notes you want include in your Scale.

Once you've defined your scale, you must save your Song. If you do not save your Song, you will lose your Scale upon exiting Bars&Pipes Professional. You can also use the Save Scale... menu option to save your Scale (please see below).

Selecting From Existing Scales

To bring up a pop-up list of existing Scales, click on the Select button . Once you've chosen from the list, you can rename it or add and subtract notes from it.

Removing An Existing Scale

To remove the selected Scale from your list, click on the Remove button . A requester asks you to confirm your decision. Once you Remove a Scale, you cannot retrieve it, unless you load a previously saved version of the Scale from disk.

Changing The Name Of A Scale

After the Name: prompt, you'll find the name of the selected Scale. Click in this area to modify the name or enter a new one. Use the backspace and delete keys if necessary.

Loading A Previously Saved Scale

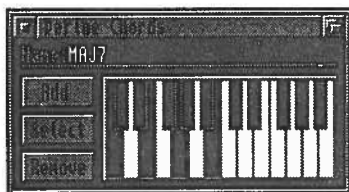
To load a previously saved Scale from disk, choose Load Scale from the Define Scales window menu.

Saving A Scale

To save a Scale to disk, select the Save Scale option.

Define Chords Window

Use the Define Chords window to create your own Chords.



The Define Chords window has a two octave keyboard area, control buttons, a name area, and menu options.

Adding And Subtracting Notes From Chords

On the lower right side of the Define Chords window, you'll find a two octave keyboard. Active notes are highlighted in blue, while inactive notes are white.

When you click on a white note, it turns blue. This indicates that the note is included in the Chord. When you click on a blue note, it turns white again, thus indicating that the note is no longer a member of the Chord.

Creating A New Chord

Click on the Add button to create a new Chord. Then, enter a name after the Name: prompt. Click and highlight the notes you want include in your Chord.

Once you've defined your Chord, you must save your Song. If you do not save your Song, you will lose your Chord upon exiting Bars&Pipes Professional. You can also use the Save Chord... menu option to save your Chord (please see below).

Selecting From Existing Chords

To bring up a pop-up list of existing Chords, click on the Select button. Once you've chosen from the list, you can rename it or add and subtract notes from it.

Removing An Existing Chord

To remove the selected Chord from your list, click on the Remove button. A requester asks you to confirm your decision. Once you Remove a Chord, you cannot retrieve it, unless you load a previously saved version of the Chord from disk.

Changing The Name Of A Chord

After the Name: prompt, you'll find the name of the selected Chord. Click in this area to modify the name or enter a new one. Use the backspace and delete keys if necessary.

CHAPTER THIRTY

Loading A Previously Saved Chord

To load a previously saved Chord from disk, choose Load Chord from the Define Chords window menu.

Saving A Chord

To save a Chord to disk, select the Save Chord option.

Define Rhythms

Use the Define Rhythms window to create your own Rhythms.



By definition, a Rhythm includes three elements:

1. A sequence of notes which defines the timing, emphasis, and length of each rhythmic event;
2. A loop length that determines the length of the pattern; and
3. A name for the Rhythm.

Creating A New Rhythm

To create your own Rhythms, open the Define Rhythms Window from the Define... Rhythms option of the Windows menu. Or, from the Graphic Editor window, use the Define menu.

NOTE → If you want to Import a Rhythm from the Main Screen, open the Define Rhythms window from the Main Screen. If you want to Import a Rhythm from the ClipBoard, or if you are currently in a Track's Sequence Editor window, open the Define Rhythms window from the Sequence Editor window.

To create your own rhythm from scratch, first record a sequence of notes that the rhythm uses to define its timing, emphasis, and length. To do so, tap out any notes on your instrument keyboard, as if you were playing the drums. The actual notes you play don't matter, since the rhythm just uses only the start time, velocity, and duration of the notes to define the rhythm pattern.

Adding A New Rhythm

To add a new Rhythm to the list, click on the Add button. This creates a blank Rhythm with no pattern and a loop length of zero.

Selecting An Existing Rhythm

To access a scrolling list of all available Rhythms, click and hold on the Select button. Then drag the mouse to the desired Rhythm. If you cannot see the Rhythm you want, use the arrows above and below the list to scroll the menu up or down. You can change the name, length, and patterns of any existing Rhythm.

Removing A Rhythm

To remove a Rhythm from the list, select it and press the Remove button.

Grabbing Clips As Rhythms

Because the Rhythm Pattern consists of a sequence of notes, you can record it the same way you would a Track Sequence. For example, you can record your Rhythm in real-time, step-enter it, or draw each note with the Pencil.

★ TIP ★ Often, sections of previously recorded Songs make great Rhythm templates.

Once you've created a pattern of notes and activated the Add button, you're ready to pull the pattern into the Define Rhythm window. Do so by clicking on one of two command buttons: Grab Clip from ClipBoard or Grab Clip from Track.

The Grab Clip from ClipBoard button copies the currently selected Clip from the ClipBoard window to the Define Rhythm window. Use this command if you have saved your rhythm template to the ClipBoard. By default, the loop length is the length of the Clip, however, you can edit the loop length as needed.

The Grab Clip from Track button copies the notes from the section bounded by the Edit Flags of the selected Track and copies these notes into the Rhythm. This button provides the mechanism for tapping a Rhythm into a Track and quickly transferring it into a Rhythm.

Replacing A Rhythm

If a Rhythm has an existing pattern of notes, you can change it by replacing the existing pattern with a new one. Do this by executing either of the Grab commands.

Setting The Loop Length

Once a pattern has been transferred to the Define Rhythms window, the length of the loop appears after the Loop Length: requester. To change this value, assign the Rhythm a loop length in measures, beats, and clocks.

CHAPTER THIRTY

For example, a two measure loop would be entered as "2.0.0," two measures, zero beats and zero clocks.

Changing The Rhythm Name

Give your Rhythm a name by entering it after the Name: prompt.

Loading A Previously Saved Rhythm

To load a Rhythm from disk, use the Load Rhythm... command in the Define Rhythms menu.

Saving A Rhythm

To save individual Rhythms to disk, use the Save... command in the Define Rhythms menu. Selecting this command opens the file requester from which you can create or select a file name.

Define Patch List

The Define Patch List window allows you to create Patch Lists for your synths. A Patch List contains the name and its associated Program Change number (between 0 and 127) for each of your synth's instrument sounds.



In addition to using the Define Patch List window to create Patch Lists, you can use it to access Patch Lists from disk.

★ TIP ★ You can also load lists created with The PatchMaster and SuperJAM!

The Define Patch Lists Window

The Define Patch List window contains three buttons: the Add, Select, and Remove buttons. These buttons allow you to create a new Patch List, choose a Patch List from the ones which are loaded, and remove a Patch List, respectively.

Above the Add button is the Synth: prompt and Patch List name area. To the right of the Add button is the number prompt and the program change name area. To the right of the Select and Remove buttons is the scrolling Patch List. Use the scroll bar and scroll arrows to scroll through the list.

SCALES, CHORDS, RHYTHMS AND PATCHES

Creating A New Patch List

To create a new Patch List, click on the Add button. Then, enter a Patch List name by clicking in the space to the right of the Synth: prompt, and entering the name.

To enter the actual Patch List, click after the number prompt and enter the Program Change's name. When you press the return key on your Amiga keyboard, the number prompt automatically increments to the next Program Change.

Choosing A Patch List

To choose a Patch List, click and hold the Select button. A pop-up list appears where you can select the Patch List you want to use.

NOTE → If there are no Patch Lists loaded, the pop-up list does not appear.

Editing A Patch List

To edit an existing Patch List, choose it with the Select button.

Change the name of the Patch List after the Synth: prompt; change the names of the individual program changes by clicking on the name in the scrolling list, then changing the name after the number prompt.

Removing A Patch List

To remove unused Patch Lists, click on the Remove button. This removes the selected Patch List from the loaded list of Patch Lists. A requester asks you to verify this operation.

Loading A Patch List

To load Patch Lists previously saved with Bars&Pipes Professional, SuperJAM! or The PatchMeister, use the Load Patch List... command found in the Define Patch Lists menu.

★ TIP ★ You'll find the SuperJAM! Patch Lists in the SuperJAM!/Bands directory.

Saving A Patch List

Choose the Save Patch List... option in the Define Patch Lists menu to save the selected Patch List.

★ TIP ★ You can use Patch Lists created in Bars&Pipes Professional for your SuperJAM! Bands.

You can find out more about Patch Lists in the chapter on Customizing Your Environment.

CHAPTER THIRTY

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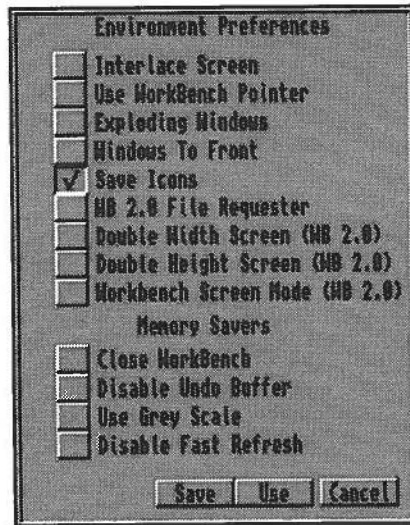
Chapter 31

Overview

In this chapter, we'll learn how to customize your Bars&Pipes Professional environment, so that it automatically sets up the system to your liking. We'll also discuss the disk files that Bars&Pipes Professional uses to keep track of your preferences.

The Environment Preferences

In the Main menu, the Environment... option in the Preferences menu opens the Environment Preferences requester. This requester controls various aspects of Bars&Pipes Professional's appearance as well as some memory saving options:



Interlace Screen

Select the Interlace Screen option to double the vertical resolution of the Bars&Pipes Professional environment.

Use Workbench Pointer

If you'd rather use the Workbench mouse pointer instead of the Bars&Pipes Professional saxophone, enable Use Workbench Pointer.

CHAPTER THIRTY-ONE

Exploding Windows

The Exploding Windows option causes windows to open with an expanding rectangle and close with a contracting rectangle.

Windows To Front

Normally, use the standard Window To Front/Back button on the top right of each window to bring a window to the front. If you'd like any window to come immediately to the front no matter where you click in it, select Windows To Front.

Save Icons

Bars&Pipes Professional will only create an icon for a song file if the Save Icons option is enabled.

WB 2.0 File Requester

If you're running Bars&Pipes Professional under Workbench 2.0 or later, you may optionally use the Workbench file requester for selecting files.

Double Width Screen/Double Height Screen

Under Workbench 2.0, Bars&Pipes Professional can display its screen at double width and/or double height, providing much more room to drag and place windows.

Workbench Screen Mode

Also under Workbench 2.0, Bars&Pipes Professional can adopt the current screen mode used by Workbench. This is particularly useful with the new AGA chipset machines (the Amiga 4000 and 1200) because it provides an automatic method for supporting the new graphic modes.

Close Workbench

To save memory, Bars&Pipes Professional can attempt to close Workbench. This only succeeds if no programs have windows open in Workbench.

Disable Undo Buffer

When the Bars&Pipes Professional sequencer records a Track, it automatically backs up the entire performance in an Undo buffer. Although this provides an easy way to recover from a poor recording, it doubles the memory provided for MIDI events. Disable the Undo buffer to double the number of notes you can record in low memory situations.

Use Grey Scale

Bars&Pipes Professional normally displays in eight colors. Use Grey Scale halves the color count to only four, saving graphics memory.

Disable Fast Refresh

Bars&Pipes Professional's windows keep their images intact, even when behind other windows. This results in very fast refresh, but eats memory. Disable Fast Refresh saves memory because it no longer stores hidden imagery, but the drawing time can become painfully slow.

Save

Select the Save button to implement the changes and permanently save your choices in the "Bars&Pipes Professional.info" file. Whether run Bars&Pipes Professional from its icon or the Shell, the program still looks at the "Bars&Pipes Professional.info" file for these preferences. If the .info does not exist, Bars&Pipes Professional chooses its default preferences.

Use

To use the changes without making them permanent, select Use.

The Support Drawer and Support Files

Bars&Pipes Professional must keep its control files in a support directory:

If a drawer named "Support" exists within the same directory as the Bars&Pipes Professional drawer, Bars&Pipes Professional places its support files there.

If there is no drawer named "Support" located within the same directory, Bars&Pipes Professional places the support files in the S: directory. This is the same directory that contains your startup-sequence.)

- ★ TIP ★ If you are using Bars&Pipes Professional without a hard drive and want to boot with a Workbench disk, create a Support drawer on your Bars&Pipes Professional program disk. Then move the files, Tools, Accessories, and BPPDIRs from the S: directory on your WorkBench disk to the Support drawer created on your program disk.

The Tools File

Bars&Pipes Professional uses the Tools file when customizing your environment. This text file contains the names and path names of the Tools currently loaded in the ToolBox.

Bars&Pipes Professional updates the Tools file whenever you Install or Remove a Tool in the ToolBox.

The Accessories File

Bars&Pipes Professional also uses the Accessories file when customizing your environment. This text file contains the names and path names of the Accessories loaded in the Accessories window.

CHAPTER THIRTY-ONE

Bars&Pipes Professional updates the Accessories file whenever you Install or Remove an Accessory.

BPPDirs

The BPPDirs file, another environment file, is a binary file that contains the path names of files that you load and save, such as Song files, Patch Lists, and Chords.

Whenever you load or save a file, Bars&Pipes Professional refers to the Bppdirs file to determine the last place you loaded or saved a similar type of file. Bars&Pipes Professional then directs the file requester to this location.

When you change directories with the file requester and select Load or Save, Bars&Pipes Professional looks to the new directory. Bars&Pipes Professional updates the BPPDirs file whenever you exit Bars&Pipes Professional.

Settings in Song Files

Bars&Pipes Professional saves many settings in each individual Song file, including which windows are open and closed, the color palette as defined by the True Colors Accessory, the position of window icons, Patch Lists, Chords, Scales, Rhythms, Metronome settings, Tool Trays, the ToolPad, Tools in PipeLines, the status of Thru faucets, MIDI channel selectors, the status of Edit windows and all other musical information.

Creating a Preset Environment With New.song

If you prefer a particular configuration of Tools, Tracks, Tempos, etc., you can set your preferences, then save them as a Song. This way, you'll have a preset environment each time you begin a new Song.

To do so, first set up your Tracks, MIDI channels, Tool placements, etc., and then use the Save As Default command found in the Song menu. This saves your settings to a file called "New.song." Each time you run Bars&Pipes Professional or select New from the Song menu, Bars&Pipes Professional automatically loads this file.

- ★ TIP ★ When you load another Song, Bars&Pipes Professional overrides your "New" settings with those in the currently loaded file. To impose your new environment on old Song files, load your old Song. Then make a Group out of all of the Tracks contained in the old Song file. Next, save the Group to disk and select New from the Song menu. After you delete all the Tracks in the New Song, load in the Group.

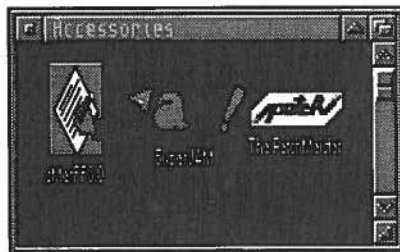
Appendix

Accessories

Please see Chapter 14, Accessories, for a detailed description.

Window

The Accessories window displays the currently loaded Accessories.



In general, double-click on an Accessory to run it. Some Accessories are always active.

Menu

Install... loads an Accessory into Bars&Pipes Professional.

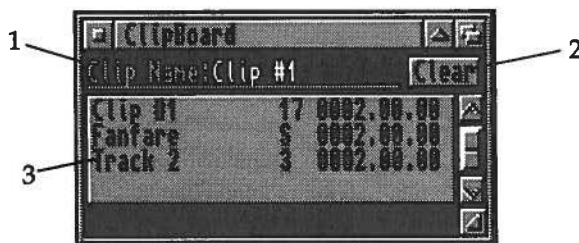
Remove removes an Accessory from Bars&Pipes Professional.

Clipboard

Please see Chapter 20, Multi-Track Editing, for a detailed description.

Window

The Clipboard window displays all currently loaded Clips.



1. **Clip Name** displays the name of the currently selected Clip. Click in this area to change the name of the Clip.

APPENDIX

2. **Clear** deletes the currently selected Clip from memory.
3. **Clip List** displays the Clips currently in memory.

File Menu

Load Clip... loads a previously saved Clip from disk.

Save Clip... saves the currently highlighted Clip to disk.

Clear All Clips deletes all Clips from memory.

Include Menu

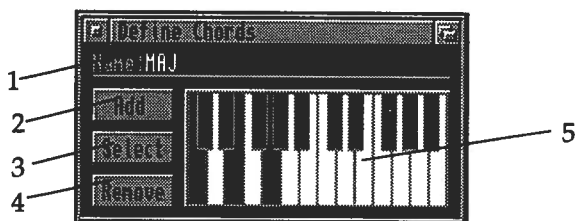
The include menu controls which MIDI Events and Song Parameters are filtered from a Clip, each time you paste or mix a Clip.

Define Chords

Please see Chapter 30, Scales, Chords, Rhythms and Patches, for a detailed description.

Window

The Define Chords window provides the ability to define your own Chords.



1. **Name:** displays the currently selected Chord. Click in this area to name a new Chord.
2. Click on **Add** after you have entered in a new Chord name and chosen the notes in the Chord. Doing so adds the Chord to your list of Chords.
3. **Select** opens a pop-up list of Chords.
4. **Remove** deletes the currently selected Chord from your list of Chords.
5. The **Keyboard** inputs and displays notes in the selected Chord.

Menu

Load Chord... loads a previously saved Chord from disk.

Save Chord... saves the currently selected Chord to disk.

Define Patch Lists

Please see Chapter 30, Scales, Chords, Rhythms and Patches, for a detailed description.

Window

The Define Patch Lists window provides the ability to define your own Patch Lists.



1. **Synth** displays the name of the MIDI device for the currently selected Patch List. Click here to enter or change the name.
2. **Patch Name** displays the currently selected Patch from the Patch List. Click here to enter or change the name.
3. Click on **Add** after you have created a new Patch List and wish to add the Patch List to your list of Patch Lists.
4. Click on **Select** to open a pop-up list of Patch Lists.
5. Click on **Remove** to remove the currently selected Patch List from your list of Patch Lists.
6. **Patch List Display** shows the Patches in the currently selected Patch List. Click on a Patch in the list to highlight it.

Menu

Load Patch List... loads a previously saved Patch List from disk.

Save Patch List... saves the currently selected Patch List to disk.

Define Rhythms

Please see Chapter 30, Scales, Chords, Rhythms and Patches, for a detailed description.

Window

The Define Rhythms window provides the ability to define your own Rhythms.

APPENDIX



1. **Name:** displays the currently selected Rhythm. Click here to change the name of the Rhythm or name a new Rhythm.
2. **Loop Length:** displays the length in song time of the currently selected Rhythm. Click here to type in a new rhythm length.
3. **Grab Clip from Clipboard** grabs the highlighted Clip in the ClipBoard as a new Rhythm.
4. **Grab Clip from Track** grabs the area between the Edit flags in the highlighted Track as a new Rhythm.
5. Click on **Add** after you have created a new Rhythm and want to add it to your list of Rhythms.
6. Click on **Select** to open a pop-up list of Rhythms.
7. Click on **Remove** to remove the currently selected Rhythm from your list of Rhythms.

Menu

Load Rhythm... loads a previously saved Rhythm from disk.

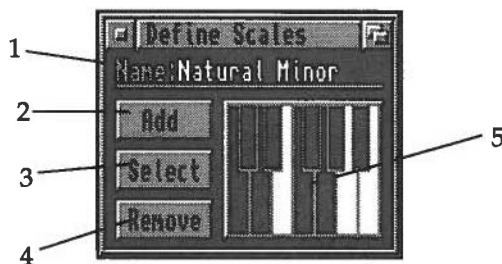
Save Rhythm... saves the currently selected Rhythm to disk.

Define Scales

Please see Chapter 30, Scales, Chords, Rhythms and Patches, for a detailed description.

Window

The Define Scales window provides the ability to define your own Scales.



1. **Name:** displays the currently selected Scale. Click here to name a new Scale.
2. Click on **Add** after you have entered in a new Scale name (1) and chosen the notes in the Scale (5) to add the Scale to your list of Scales.
3. Click on **Select** to open a pop-up list of Scales.
4. Click on **Remove** to remove the currently selected Scale from your list of Scales.
5. The blue notes in the **Keyboard** are included in the selected Scale.

Menu

Load Scale... loads a previously saved Scale from disk.

Save Scale... saves the currently selected Scale to disk.

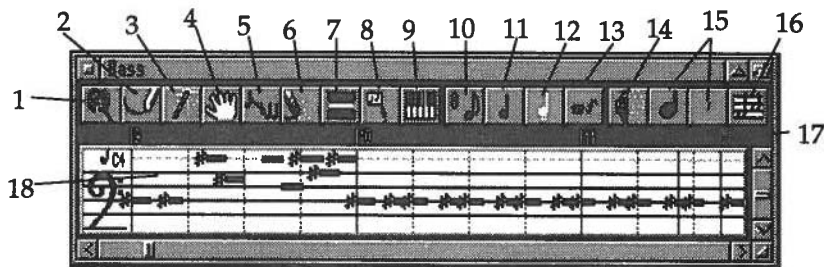
Graphic Editor

Please see Chapter 8, Note Editing, for a detailed description.

Window

Access the Graphic Editor by double-clicking on a Track in the Tracks window, single-clicking on a Track in the Tracks window and pressing the Return key on the Amiga keyboard, or clicking on a measure with the Magic Wand in the Song Construction window.

APPENDIX



1. **Magnifying Glass** opens an information window which describes the event you are editing. In this window, you can edit numerically.
2. **Pencil (F1)** draws in information such as notes and song parameters.
3. **Magic Wand (F2)** lengthens or shortens the size of a note and also changes song parameters.
4. **Hand (F3)** grabs and drags notes and song parameters.
5. **Duplicator (F4)** duplicates and drags notes and song parameters.
6. **Eraser (F5)** deletes notes and song parameters.
7. **ToolPad** Toolizes notes and song parameters with selected Tool.
8. **Bounding Box (F6)** draws a box around a group of notes to edit, drag, erase, duplicate, or Toolize more quickly.
9. **Step Entry** activates Step Entry mode.
10. **Note Value** establishes what length value the note you draw is.
11. **Note Modifier** determines whether the note is dotted, a triplet, or normal.
12. **Articulation** establishes whether an entered note has staccato (short), portato (normal), leggerio (long), or legato (slurred).
13. **Volume** determines the dynamic level of the note being entered.
14. **Speaker** plays the currently displayed notes.
15. **Zoom In/Out** adjusts magnification of editing area.
16. **Timing** toggles between song time and SMPTE time.
17. **Edit Flags** maps off an area to be affected by commands in the Edit menu such as cut, paste, copy, etc.

18. The Sequence Area displays events and Song Parameters.

Edit Menu

Cut (Right Amiga - X) cuts out a flagged-off area of the sequence.

Copy (Right Amiga - C) copies a flagged-off area of the sequence.

Paste (Right Amiga - P) inserts a previously cut or copies area of the sequence.

Mix (Right Amiga - M) integrates a previously cut or copies area of the sequence into another area of it (like Paste without insert).

Erase (Right Amiga - E) removes a flagged-off area of the sequence.

Insert (Right Amiga - I) adds a specified blank space into a flagged-off area.

Delete (Right Amiga - D) removes a flagged-off area of the sequence

Toolize (Right Amiga - T) Toolizes a flagged-off area of the sequence with the currently selected Tool in the ToolPad.

Selective Toolize (Right Amiga - S) operates on a range of notes and Song Parameters.

Repeat (Right Amiga - R) duplicates the flagged-off section of the sequence. Duplicate sections are pasted to the right of the right Edit flag.

Listen (Right Amiga - L) plays everything between the Edit flags. Tools on the Output PipeLine still affect the events.

Boundaries (Right Amiga - B) allows you to type in the location of the Edit flags instead of dragging them.

Undo (Right Amiga - U) returns your sequence to its state prior to the last edit operation.

Update (Right Amiga - Z) updates the Tracks window with your newest edits.

Abort (Right Amiga - Q) aborts all edits you've created and closes the Sequence Editor.

Show Menu

The show menu displays the following for entry and editing:

Lyrics, Chords, Key & Scale/Mode, Rhythm, Dynamics, Time Signature, Staff - Notation, Tablature, Staff - Hybrid, Piano Roll, Note Velocity, Pitch Bend, Mono After-Touch, Poly After-Touch, Control Change, Program Change, System Exclusive

APPENDIX

Display Menu

Background displays key and/or rhythm in the background.

Note Range sets the range of notes displayed by either centering the staff or adjusting the piano roll bounds.

Control Change # selects the currently displayed control change information.

Notation chooses whether Staff-Notation displays in concert key or the transposed key chosen in the Notation menu's Transposition option.

Edit PadTool Controls opens the Control window for the currently selected Tool in the ToolPad.

Hit List displays notes as hits in the hybrid staff and piano roll, if a hit has been assigned to a particular note.

Scroll with Performance causes the Edit window to scroll with the Transport Controls during playback.

Notation Menu

Resolution selects the smallest note transcribed by the standard notation.

Transposition chooses the type of transposition to display in standard notation. Does not affect the actual notes, only their standard notation display.

Update Notation refreshes the Edit window to clean up any graphic glitches.

Transcribe Options opens the Transcribe Options Requester to control how notes are transcribed to Staff-Notation.

Transcribe transcribes either the whole Track or the part between the Edit flags to the Staff-Notation.

Print Options - chooses to print Treble clef, Bass clef, or both clefs.

Print prints the Track's standard notation.

Tablature Menu

Set Tablature Resolution sets the distance between notes considered to be on the same string of the guitar.

Set Tablature Position controls which position on the fretboard notes are transcribed.

Tabulate transcribes the entire Track or the section between the Edit flags to Tablature.

Change String Octaves changes the octaves of all strings.

Define Menu

These menu options open the various Define windows, including Scales & Modes, Chords, Rhythms, and Patch Lists.

Master Parameters Menu

Import sends selected Master Parameters information to a particular Track's Song Parameters.

Export sends selected Song Parameters for a particular Track to the Master Parameters window.

Prefs Menu

Align with: specifies where the Edit Flags automatically align.

Lock to Default Note permits movement on specified note boundaries only.

Lock to Notation Res permits movement on specified Notation Resolution boundaries only.

Lock to Key prohibits the entry of notes which fall outside of the selected key.

Lock to Rhythm conforms all entered notes to the current Rhythm template.

Play Notes sounds the notes as you edit them.

Auto Redraw causes the window to refresh after every Edit command.

Drag with Pencil causes the Pencil to drag notes after they are input.

Lengthen with Pencil causes the Pencil to alter note lengths after they are input.

Lock Wand to Note causes the Magic Wand to lock onto a note for as long as the mouse button is held.

List Editing closes the Sequence Editor and opens the List Editor for the Track.

Perform All Tracks causes all playback options such as the Speaker and the Listen command to playback all Tracks instead of just the one you're editing.

Information

The Information window displays factual information about your working environment.



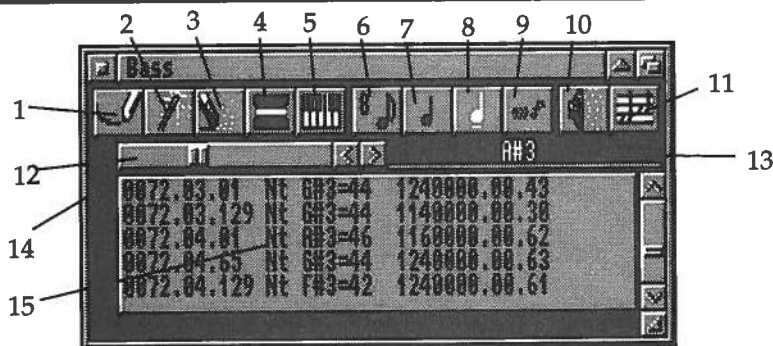
1. **Tool** displays the name of the currently selected Tool in the Tracks window.
2. **Track** displays the name of the currently selected Track.
3. **Total Free Mem** displays the remaining free memory.
4. **Free Chip Mem** displays the remaining free chip memory.
5. **Notes Allocated** displays the number of note events that Bars&Pipes Professional has allocated for its own use.
6. **Free Notes** displays the number of note events that are available to be used.
7. **Song Length** displays the current length, in measures, beats, and clocks, of your Song.
8. **Song Time** displays the current length, in hours, minutes, seconds, and SMPTE frames, of your Song.

List Editor

Please see Chapter 12, The List Editor, for a detailed description.

Window

Access the List Editor by choosing List Editor in the Prefs menu of the Graphic Editor.



1. **Pencil (F1)** draws in information such as notes and song parameters.
2. **Magic Wand (F2)** changes data. Click on the piece of data you would like to change. The data highlights in red. You are able to change the data with the Data Slider (14) or the Data String (15).
3. **Eraser (F5)** deletes notes and song parameters.
4. **ToolPad** Toolizes notes and song parameters with selected Tool.
5. **Step Entry** activates Step Entry mode.
6. **Note Value** establishes the default note value.
7. **Note Modifier** determines whether the note is dotted, a triplet, or normal.
8. **Articulation** establishes whether an entered note is staccato (short), portato (normal), leggiero (long), or legato (slurred).
9. **Volume** determines the dynamic level of the note being entered.
10. **Speaker** plays the currently displayed notes.
11. **Timing** toggles between song time and SMPTE time.
12. **Data Slider** changes the highlighted piece of data.
13. **Data String** displays the highlighted piece of data. Click in this area to type in a new data value.
14. **Edit Flags** map off an area to be affected by commands in the Edit menu such as cut, paste, copy, etc.
15. **Event List** displays the list of events. Events between the Edit Flags are displayed as purple instead of blue.

APPENDIX

Edit Menu

Cut (Right Amiga - X) cuts out a flagged-off area of the sequence.

Copy (Right Amiga - C) copies a flagged-off area of the sequence.

Paste (Right Amiga - P) inserts a previously cut or copies area of the sequence.

Mix (Right Amiga - M) integrates a previously cut or copies area of the sequence into another area of it (like Paste without insert).

Erase (Right Amiga - E) removes a flagged-off area of the sequence.

Insert (Right Amiga - I) adds a specified blank space into a flagged-off area.

Delete (Right Amiga - D) removes a flagged-off area of the sequence

Toolize (Right Amiga - T) Toolizes a flagged-off area of the sequence with the currently selected Tool in the ToolPad.

Selective Toolize (Right Amiga - S) Toolizes only on a certain range of notes and Song Parameters.

Repeat (Right Amiga - R) duplicates the flagged-off section of the sequence. Duplicate sections are subsequently pasted to the right of the right Edit flag.

Listen (Right Amiga - L) plays everything between the Edit flags. Tools on the Output PipeLine still affect the events.

Boundaries (Right Amiga - B) allows you to type in the location of the Edit flags instead of dragging them.

Undo (Right Amiga - U) returns your sequence to its state prior to the last edit operation.

Update (Right Amiga - Z) updates the Tracks window with your newest edits.

Abort (Right Amiga - Q) aborts all edits you've created and closes the Sequence Editor.

Show Menu

The show menu displays the following for entry and editing. Choosing one or more of Staff Notation, Tablature, Staff Hybrid, Piano Roll, or Note Velocity causes Note Events to be displayed:

Staff Notation, Tablature, Staff Hybrid, Piano Roll, Note Velocity, Pitch Bend, Mono After-Touch, Poly After-Touch, Control Change, Program Change, System Exclusive,

Display Menu

Hit List causes notes to display their corresponding Hit List Translation instead of their duration.

Scroll with Performance causes the List Edit window to scroll with the Transport Controls during playback.

Prefs Menu

Align with: specifies where the Edit Flags automatically align.

List Editing closes the List Editor and opens the Graphic Editor for the Track.

Perform All Tracks causes all playback options such as the Speaker and the Listen command to playback all Tracks instead of just the one you're editing.

Main Menu

The Main menu is available when one of the following windows is active:

Information, Media Madness, Metronome, Record Activation, Set Flags, Song Construction, Time Line Scoring, Tracks Window, Tempo Palette, Transport Controls

Certain menu options may be ghosted and unavailable, depending on the present state of Bars&Pipes Professional.

The following section explains each menu option.

The Song Menu

New begins a new composition.

Load... (Right Amiga - L) loads in a previously saved Song.

Revert returns the Sequencer to its condition at the most recent save, by loading the last song saved to disk.

Save As... saves your song for the first time or under a different file name.

Save (Right Amiga - S) saves your song to disk.

Save as Default saves the current song as the default song.

Print prints the song in standard notation.

Title/Author sets the song title and author.

Length... sets the overall length of your Song.

APPENDIX

Disable/Enable MIDI connects and disconnects the MIDI Tool from the Amiga's serial port.

Propagate copies all changes made to the first instance of each ABA section to all other instances of those sections in the song.

About brings up a requester of copyright information.

Quit (Right Amiga - Q) terminates Bars&Pipes Professional.

The Track Or Group Menu

New (Right Amiga - N) creates a new Track.

Copy creates a duplicate of the selected Track.

Merge... (Right Amiga - M) mixes the contents of one Track into another Track.

Delete (Right Amiga - D) removes the selected Track.

Load Track... loads a Track from disk.

Load Group... loads a Group from disk.

Save Track or Group... saves the selected Track or Group to disk.

Save Track As Default saves the selected Track as the default Track used by the New command.

Erase erases the Track or Group, emptying it of its contents.

Toolize processes all notes in the currently selected Track or Group with the currently selected Tool in the ToolPad.

Time-Shift... moves everything in the selected Track or Group forward or backward in time.

Propagate copies changes made to the first instance of each section to all other instances of those sections (for the selected Track or Group only).

Print... prints the Track or Group.

The Edit Menu

Cut (Right Amiga - X) cuts a section from the Song.

Copy (Right Amiga - C) copies a section from the Song.

Paste (Right Amiga - P) inserts a cut or copied section into the Song.

Mix merges a cut or copied section into the Song.

Erase (Right Amiga - E) deletes notes from a section of the Song.

Insert (Right Amiga - I) inserts a blank space in the Song.

Delete deletes a section in the Song. Same as Cut, but does not place the deleted section into the clip buffer.

Toolize (Right Amiga - T) processes the section with the currently selected Tool in the ToolPad.

Repeat (Right Amiga - R) repeats a section of the Song one or more times.

Propagate (Right Amiga - A) copies changes made to the first instance of an ABA section to all remaining sections of the same name, in conjunction with the left Edit flag.

Undo (Right Amiga - U) returns the Song to its state prior to the last operation.

The Tool Menu

Move Left (left arrow key) moves the highlighted Tool to the left.

Move Right (right arrow key) moves the highlighted Tool to the right.

Edit opens the Control window of the highlighted Tool.

Remove (del key) removes the highlighted Tool from the PipeLine.

Connect (Right Amiga - K) connects a Branching Tool to a Merging Tool.

ToolTrays opens one of eight ToolTrays by name.

The Timing Menu

Synchronize to MIDI Clocks disables Bars&Pipes Professional's internal timer and slaves it to MIDI Clocks coming in the MIDI interface attached to your Amiga.

Send MIDI Clocks causes Bars&Pipes Professional to send MIDI Clock events as well as Start, Stop, Continue, and Song Position events.

SMPTE Format sets the SMPTE format when using MIDI Time Code.

SMPTE Offset adjusts the Global SMPTE Offset.

Display with SMPTE Offset causes the Transport to add the SMPTE Offset to song time to display the SMPTE time.

Synchronize to Tempo Map causes Bars&Pipes Professional to use its own internal Tempo Map.

The Windows Menu

Accessories opens the Accessory window.

Clipboard opens the Clipboard window.

Define... opens the Define Scales, Chords, Rhythms, or Patch Lists window.

APPENDIX

Edit PadTool Controls opens the Control window of the selected Tool in the ToolPad.

Information opens the Information window.

Master Parameters opens the Master Parameters window.

Metronome opens the Metronome window.

Mini Transport opens the Mini Transport window.

Mix Maestro opens the Mix Maestro window.

Record Activation opens the global Record filter window.

Set Flags opens the Set Flags window.

Song Construction opens the Song Construction window.

Tempo Map opens the Tempo Map window.

Tempo Palette opens the Tempo Palette window.

Time-Line Scoring opens the Time-Line Scoring window.

Toolbox opens the Toolbox window.

Tracks opens the main Tracks window.

Transport opens the Transport Controls window.

The Preferences Menu

Environment opens the Environment Preferences requester.

Align with: specifies where the Edit Flags automatically align.

Multiple In sets up Bars&Pipes Professional to record more than one MIDI channel at a time on different Tracks.

Clean Cuts causes Bars&Pipes Professional's Edit operations to break notes straddling the Edit Flags in two, one before and one after the cut or copy.

Remote Control... opens the define Remote Control window.

Align Clips... gives you two ways to paste multiple Track Clips.

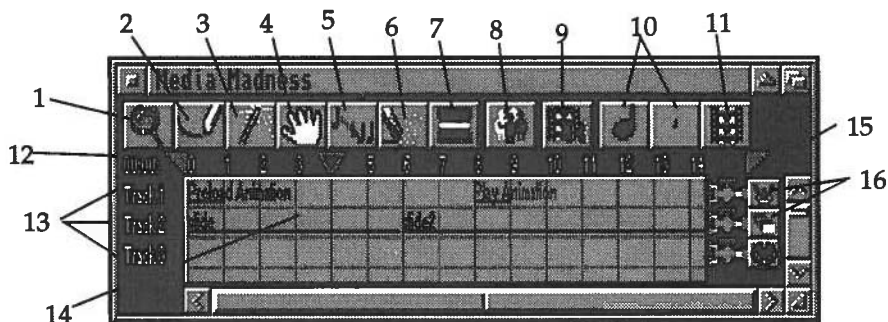
Combine Timeline... determines how Bars&Pipes Professional recreates the system Tempo Map, Section List, and Global Song Parameters when you edit several songs in the Time-Line Scoring window.

Master Parameters

Please refer to the Graphic Editor description featured earlier in this chapter.

Media Madness

Please see Chapter 28, Media Madness, for a detailed description.



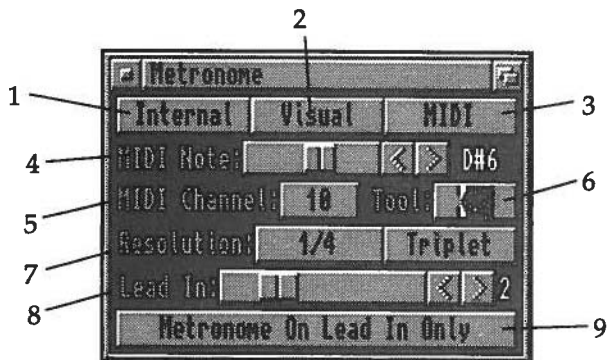
1. **Magnifying Glass** opens an Event window which displays information on the highlighted note event in the Sequencer Display.
2. **Pencil (F1)** creates events aligned with the choice you've made in the Align with... option in the Preferences menu. If clicked in the Track name area, creates a new Track.
3. **Magic Wand (F2)** alters events or Track names.
4. **Hand (F3)** drags the left side of events, aligning them with the choice you've made in the Align with... option in the Preferences menu. It drags the right side to change the duration of the events. In the Track name area, drags Tracks up and down relative to each other.
5. **Duplicator (F4)** duplicates events. In the Track names area, duplicates Tracks.
6. **Eraser (F5)** erases events. In the Track names area, erases Tracks.
7. **ToolPad** Toolizes events.
8. **Normal/Solo/Mute** toggles highlighted Track between Normal, Solo, and Mute modes.
9. **Media Madness Record** button automatically places Media Madness Recorder Tools in all Tracks, if they are not there already, and activates the Media Madness Recorder record mode.
10. **Zoom In/Out** increases/decreases magnification of the Tracks.
11. **Timing** switches between song time and SMPTE time.
12. **Edit Flags** map off an area to be affected by commands in the Edit menu such as cut, paste, copy, etc.

APPENDIX

13. **Track Names** displays Track names.
14. **Sequencer Area** displays MIDI events as horizontal dashes, and Hit events as Hit List names.
15. **Thru/Mute/Normal Faucets** change Tracks between Thru, Mute, and Normal modes. By default, Tracks are in Thru mode.
16. **Output Tools** appear at the end of each PipeLine.

Metronome

Please see Chapter 15, The Metronome, for a detailed description.

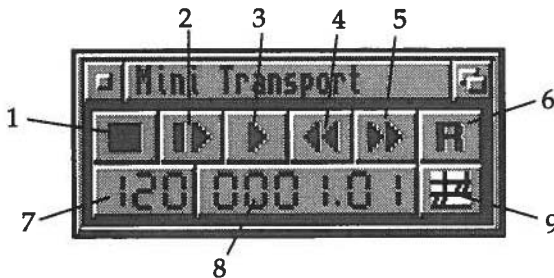


1. **Internal** activates the metronome click through the Amiga's internal sound chip.
2. **Visual** activates the metronome click to cause the screen to flash a different color.
3. **MIDI** activates the metronome click to send a note out of the selected Tool on the selected channel.
4. **MIDI Note** selects which note is sent out when the MIDI button (3) is active.
5. **MIDI Channel** selects which MIDI channel the note (4) is sent out when the MIDI button (3) is active.
6. **Tool** contains the output Tool that sends out the MIDI Note (4) when the MIDI button (3) is active. Drag and drop an output Tool into this space.
7. **Resolution** chooses how the metronome subdivides the beat. Highlight the Triplet button if you would like a triplet metronome.

8. **Lead In** selects the number of measures that the metronome counts down before a recording operation.
9. **Metronome On Lead In Only** if selected, the metronome only sounds during the lead in countdown before a recording operation.

Mini Transport

Please see Chapter 16, The Transport Controls, for a detailed description.

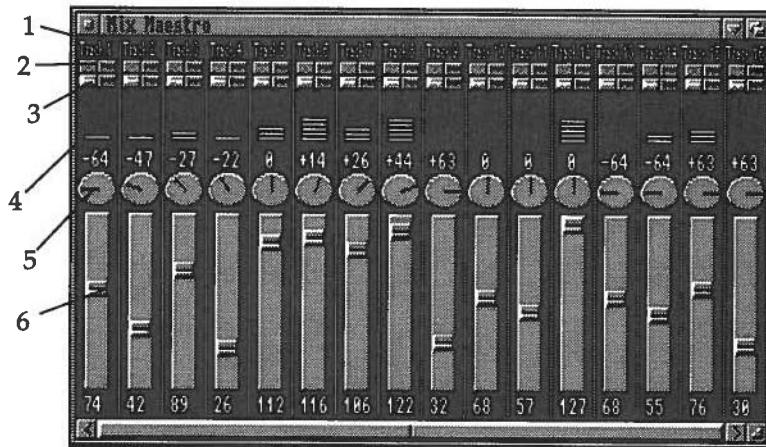


1. **Stop (Enter key on keypad)** stops the Sequencer.
2. **Start (0 key on keypad)** starts the Sequencer from the beginning.
3. **Play (Enter key on keypad)** starts the Sequencer from the current Song Position.
4. **Rewind** rewinds or decreases the Song Position.
5. **Fast Forward** fast forwards or increases the Song Position.
6. **Record ("R")** places the Sequencer in record mode.
7. **Tempo** displays the Tempo. Click, hold, and drag the mouse pointer up or down to change the Tempo.
8. **Song Position Display** displays the current Song Position.
9. **Timing** toggles the Song Position display (8) between song time and SMPTE time.

APPENDIX

Mix Maestro

Please see Chapter 22, Mix Maestro, for a detailed description.



Window

1. **Track Name** displays the Track name.
2. **Mute** toggles the Track's mute mode.
3. **Locks** lock the sliders of Tracks together.
4. **LED Display** shows the volume level of music playing out of each Track.
5. **Panning Knob** adjusts the Track's stereo panning.
6. **Volume Slider** adjusts the Track's volume.

Menu

ByPass Mix disables volume and panning control changes.

Copy Mix to ClipBoard copies the Control Changes selected in Set Controllers into a Clip in the ClipBoard.

Paste Mix From ClipBoard replaces the current Mix with the one highlighted in the ClipBoard.

Clear Mix erases, from each Track, the Control Changes selected in Set Controllers.

Clear Locked Pans erases, from each locked Track, the Control Change selected as panning in Set Controllers.

Clear Locked Volumes erases, from each locked Track, the Control Change selected as volume in Set Controllers.

Lock All sets one of the three colored locks on all Tracks. Choose which color from the Lock All submenu.

UnLock All deselects one of the colored locks on all Tracks. Choose which color of lock to deselect from the UnLock All submenu.

Mute All mutes all Tracks.

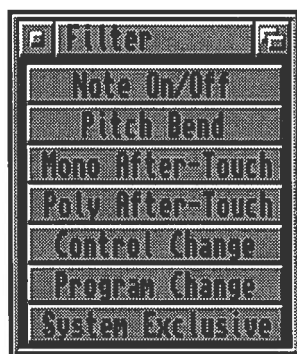
UnMute All unmutes all Tracks.

Set Controllers sets which Control Change corresponds to panning or volume.

SnapShot enters the current volume and panning information into each Track at the current Song Position. Use the SnapShot command to set initial values, and to create jumps from one value to another.

Record Activation

Please see Chapter 6, Recording, for a detailed description.



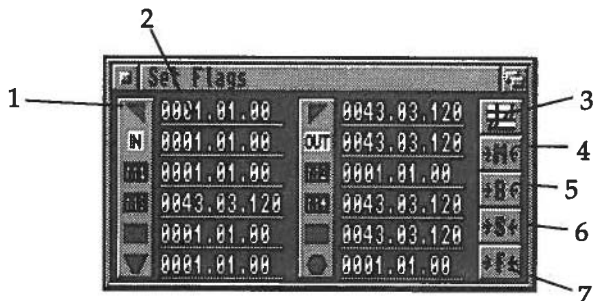
Highlight the MIDI Events you want to record, and deactivate the MIDI Events you want to ignore. Events appearing in red are recorded, while unhighlighted events appearing in blue are filtered out.

APPENDIX

Bars&Pipes Professional will remove filtered events before they enter the Sequencer. It will not, however, remove existing events of the same type that have previously been recorded into the Track.

Set Flags

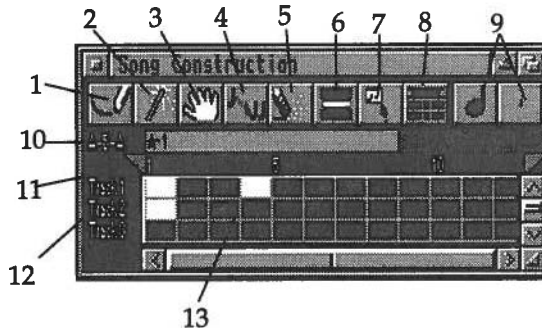
Please see Chapter 20, Multi-Track Editing, for a detailed description.



1. **Flags** displays which flag corresponds to the adjacent text.
2. **Flag Position** displays the current flag position. Click in this area to type in a new flag position. Hit return to confirm the new flag position.
3. **Timing** button controls whether the Flag Position is displayed in SMPTE time or music time.
4. **Align with Measure** locks flags to measure boundaries when dragged.
5. **Align with Beat** locks flags to beat boundaries when dragged.
6. **Align with Second** locks flags to second boundaries when dragged.
7. **Align with Frame** locks flags to SMPTE frame boundaries when dragged.

Song Construction

Please see Chapter 21, Song Construction, for a detailed description.



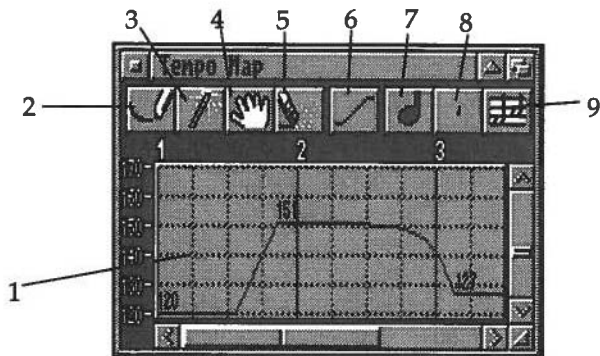
1. **Pencil (F1)** inserts a blank measure. In Track names area, creates a new Track.
2. **Magic Wand (F2)** opens the Sequence editor at the specific measure, modifies an ABA section name or length, or modifies a Track name.
3. **Hand (F3)** moves a measure, ABA section, or Track.
4. **Duplicator (F4)** duplicates a measure, ABA section, or Track.
5. **Eraser (F5)** erases the contents of a measure, erases an ABA section, or erases a Track.
6. **ToolPad** Toolizes a measure or ABA section.
7. **Bounding Box (F6)** in conjunction with the above modes, allows you to draw a box around multiple measures.
8. **Lock to ABA** if highlighted, causes operations involving duplicating or moving ABA sections to also operate on all measures beneath the ABA sections involved.
9. **Zoom In/Out** adjusts magnification of measure display.
10. **ABA Strip** displays and accesses ABA sections.
11. **Edit Flags** map off an area to be affected by commands in the Edit menu such as cut, paste, copy, etc.
12. **Track Names** displays Track names.

APPENDIX

13. **Measure Display** shows measures in white that have information in them and measures in grey that do not.

Tempo Map

Please see Chapter 18, Tempo Mapping, for a detailed description.



1. **Tempo Display** displays the Tempo Graph.
2. **Pencil (F1)** creates a Tempo Change.
3. **Magic Wand (F2)** opens the Tempo Change requester for an existing Tempo Change.
4. **Hand (F3)** moves an existing Tempo Change.
5. **Eraser (F5)** deletes a Tempo Change
6. **Slope** chooses the slope for a Tempo Change.
7. **Zoom In** increases Tempo Display magnification.
8. **Zoom Out** decreases Tempo Display magnification.
9. **Timing** toggles between song time and SMPTE time.

Tempo Palette

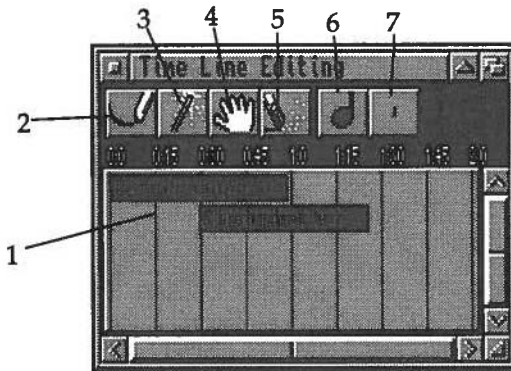
Please see Chapter 17, Timing, Syncing, and Tempo, for a detailed description.



1. **Tempo Buttons** changes the initial Tempo of your Song.
2. **Tempo String** allows you to type in a new tempo for a Tempo button.

Time Line Scoring

Please see Chapter 23, Time Line Scoring, for a detailed description.



1. **Scoring Grid** displays loaded songs as colored rectangles.
2. Click inside the Scoring Grid with the **Pencil (F1)** to load in and place a song.
3. **Magic Wand (F2)** opens the Song Start Time requester, allowing you to type in the Song Start Time as well as lock to a measure boundary.
4. **Hand (F3)** moves a Song forward or backward in time.
5. **Eraser (F5)** remove a Song.
6. **Zoom In** increase the Scoring Grid magnification.
7. **Zoom Out** decrease the Scoring Grid magnification.

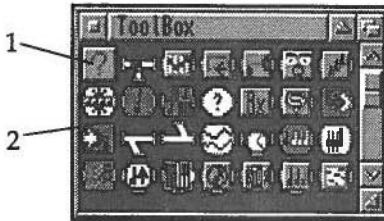
APPENDIX A

ToolBox

Please see Chapter 7, Tools, for a detailed description.

Window

Access Tools, MacroTools, ToolTrays, and the Create-A-Tool window through the Toolbox.



1. ? brings up a list of Tools in the ToolBox by name.
2. Tools that are loaded into the system are displayed here.

ToolBox Menu

Install Tool... loads a Tool from disk. Use this command when you can't find a Tool in the ToolBox.

Remove Tool removes the selected Tool from the ToolBox so that it is no longer loaded.

Create MacroTool... opens the Create-A-Tool window, which enables you to create your own MacroTools.

Edit MacroTool... opens the currently selected MacroTool's Control window.

Save MacroTool... saves the currently selected MacroTool to disk. Use after creating a new MacroTool or after updating an old one.

ToolTray Menu

The eight ToolTrays are listed by name. Choose one to open its window.

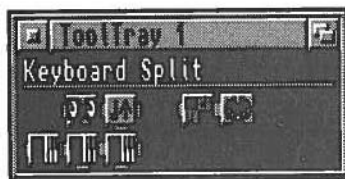
Preferences

Display Tool Names if selected, displays Tools in the ToolBox with their names.

ToolTrays

Please see Chapter 25, ToolTrays, for a detailed description.

ToolTray Window



1. **Name** of selected Tool in ToolTray.
2. **Tools**, up to sixteen copies may be dragged to and from the ToolTray. Double-click on a Tool to open its Control window. Click and drag to place a Tool in another window.

ToolTray Menu

Load Tool Tray... loads previously saved ToolTrays, including all component Tools from disk.

Save Tool Tray... saves ToolTray, including all component Tools, to disk.

Rename Tool Tray... opens the Name requester to give the ToolTray a unique name.

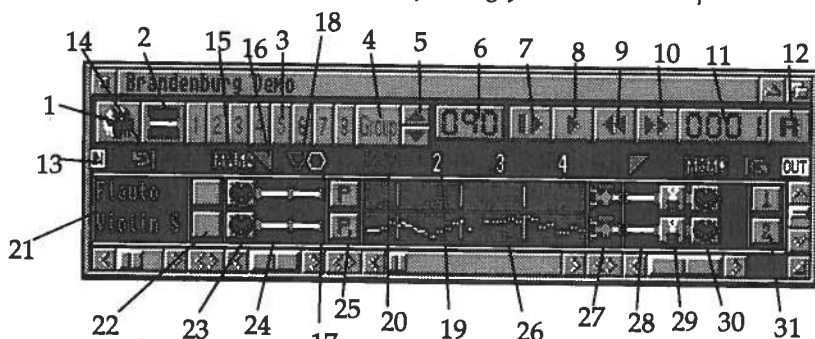
Load Tool... loads individual copy of Tool from disk saved previously with the Save Tool command.

Save Tool... saves the selected copy of the Tool to disk.

Remove Tool (Del key) removes the selected copy of the Tool from the ToolTray.

Tracks Window

Please see Chapter 19, *Advanced Sequencing*, for a detailed description.

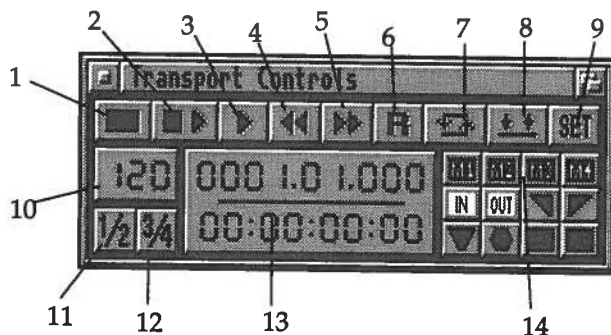


1. **Solo / Mute / Normal** toggles between Normal, Solo, and Mute function for the selected Track or Group.
2. **ToolPad** holds the current Tool to be used with the Toolize commands.
3. **Group Selectors** choose one of eight Groups.
4. **Group Button** activates Group edit mode in conjunction with one of the Group Selectors.
5. **Track Up** moves a Track up one "notch." Double-click to move the Track to the top. **Track Down** moves a Track down one "notch." Double-click to move the Track to the bottom.
6. Click and drag **Tempo** to change Tempo.
7. **Start** begins playback of sequence from the beginning.
8. **Play / Stop** toggles between playing of sequence and stopping sequence.
9. **Rewind** moves song position backward.
10. **Fast Forward** moves song position forward.
11. **Measure display** shows the measure of the current song position.
12. **Record** activates Sequencer Record Mode.
13. **Punch In/Out Flags** mark the boundaries of desired Punch In and/or Out.
14. **Loop Flags** determine the area for Looped Record mode.
15. **Memory Marker Flags** mark a place in the song.
16. **Edit Flags** establish an area within the Track or Song to edit. Using the Solo button selects a single Track.

17. **Stop Flag** stops the sequencer.
18. **Song Position Flag** marks the current song position.
19. **Measure Number** indicates the measure subdivisions of the sequence.
20. **Time Signature** displays the current number of beats per measure. This can be edited by double-clicking on it or a measure number.
21. **Track Name** displays Track name. Double-click on it to edit or choose Real-Time mode for the Track.
22. **Input Selector** indicates which Track is currently selected for input. The Multiple In command in the Preferences menu provides the option of specifying a separate input for each Track.
23. **MIDI In Tools** bring the flow of MIDI data into the PipeLine. Because these are Tools, they can be removed or replaced, so they may not appear as they do in the picture.
24. **Input PipeLine** directs the flow of MIDI information. Drag and place Tools here. Tools on this side affect notes upon input.
25. **Record/Merge/Play Select** toggles between Track Record, Merge, and Play modes.
26. **Sequencer** records input MIDI data. Double-click to access its editor.
27. **Thru/Mute/Normal Faucets** change Tracks between Thru, Mute, and Normal modes. By default, Tracks are in Thru mode.
28. **Output PipeLine** is the same as the Input PipeLine, except that Tools placed here affect notes on playback instead of on input.
29. **Quick Patch Tools** are displayed here in the Output PipeLine. They are displayed as an illustration only, and do not have to be in the Track.
30. **MIDI Out Tools** send the MIDI data to your MIDI instrument.
31. **Output Selector** accesses a palette of MIDI channels for each Track.

Transport Controls

Please see Chapter 16, The Transport Controls, for a detailed description.



1. **Stop (Enter key on keypad)** stops the sequencer when in playback or record mode. Deactivates record mode if activated.
2. **Start (0 key on keypad)** starts the sequencer from the beginning.
3. **Play (Enter key on keypad)** starts the sequencer at the current song position.
4. **Rewind** moves the current song position to the left.
5. **Fast Forward** moves the current song position to the right.
6. **Record ("R")** toggles between sequencer playback and record mode.
7. **Loop** activates Looped mode.
8. **Punch In/Out** activates Punch In/Out mode.
9. Click on the **Set** button and then click on one of the flag buttons to set the flag's position to the current song position.
10. Click and drag up and down on the **Tempo** button to change the Tempo. Click on the upper half of the tempo to increment by one, or the lower half to decrement by one.
11. **1/2** halves the initial tempo of the song. Click again to return to the original tempo.
12. **3/4** changes the initial tempo of the song by 3/4. Click again to return to the original tempo.

13. **Counter** specifies the current song position or position of a flag as you drag it. The upper half is in measures, beats, and seconds. The lower half is in hours, minutes, seconds, and frames. Change the current song position by clicking on the upper half of a number to increment by one, or the lower half of a number to decrement by one.
14. Click on one of the **Flag Buttons** to move the current song position to the flag's position. Double-click to move the current song position and start playback from a flag's position.

NOTES

A

A-B-A, 197, 199, 202, 203, 213
example, 201
Lock to, 198, 199
Strip, 195, 196

Abort, 67, 68

Accessories, 14, 133
installing, 134
removing, 134
window, 133

Accidentals, 64

Accompany B Tool, 228

Align Clips, 193

Align with, 187

Alignment, 35

Alternator Tool, 230

ANIMAl Tool, 302

Animation, 302

ARexx, 134, 306
commands, 135

ARexx In Tool, 230

Arpeggi-8 Tool, 234

Articulator Tool, 235

Auto-Locate Flags, 11

Auto Center, 55

Auto Range, 57

Auto Stem, 73

B

Bass Clef, 69, 116

Big Sys, 137

Blue Ribbon, 2
address, 2
phone numbers, 2

Boundaries, 79

bounding box, 61

BppDirs, 340

Branch Out Tool, 235

ByPass Mix, 208

C

Channel, 30

Chord Options, 72

Chord Player Tool, 236

Chords, 95, 96, 229, 330
altering, 107
entering, 103

Clean Cuts, 35, 190

Clear Locked Pans, 208

Clear Locked Volumes, 208

Clear Mix, 208

Clip, 77, 185
alignment, 193
Buffer, 185
Editing, 185

ClipBoard, 14, 77, 185
accessing, 190
Copy Mix to, 208
editing with, 192
filtering with, 193
Paste Mix from, 208
using, 191

Clogged PipeLine, 38

Close button, 9

Colors
screen, 149

Combine TimeLine, 213

Command Buttons, 58

Command Performance Tool, 306

Concert Key, 71

Conforming music, 170

Control Change, 84, 93, 123, 205, 209
entering, 88

Copy, 77, 188, 192
Track, 177

Countdown, 151

CounterPoint Tool, 49, 237

Create-A-Tool, 215
accessing, 215
Window, 43

Creativity Kit, 45

Cut, 77, 188, 192

D

Default Note, 58

Define, 14
Chords, 330
Patch List, 334
Rhythms, 331
Scales, 329

Delay Tool, 237

Delete, 78, 189
Track, 178

Deluxe Paint, 115

Demo Songs, 19

Disable/Enable MIDI, 22

Doctor of Velocity Tool, 238

Drag With Pencil, 59

Drum Maps, 284

Duplicating Notes, 65

Duplicator, 65

Dynamics, 95, 99
altering, 107
entering, 105

E

Easy Off Tool, 238

Echo Tool, 239

Edit Flags, 11, 46, 77, 123, 186
aligning, 187
positioning, 186

Edit PadTool Controls, 14

Editing Notes, 57

Editor, 53

Elbow Tool, 240

Entering Notes, 60

Environment, 337

Eraser, 65, 78, 188

Erasing Notes, 65

Escape, 38

Event Converter Tool, 240

Event Filter Tool, 242

Event Scrubber Tool, 243

Exploding Windows, 338

Export
MIDI file, 143
SMUS file, 145

Extend Notes, 72

INDEX

F

Fast Forward, 12, 154
Feedback, 6
FeedBack In Tool, 243
Feedback loop, 38
FeedBack Out Tool, 244
File Requester, 338
Flags, 11, 35
 alignment, 11
 Auto-Locate, 11
 controls, 153, 156
 Edit, 11
 Loop, 12
 moving, 11
 Position Marker, 11
 Punch In, 11
 Punch Out, 11
 Song Position, 11
 Stop, 12
Flip Tool, 244
Floppy Disk Install, 3
Follow The Leader, 138
FreezeFrame Tool, 307

G

G-LOCKenspiel Tool, 308
Gather Group, 181
General MIDI, 23
 Tool, 245
Genlock, 322
Graphic Editor, 53
Grey Scale, 338
Groove Quantize Tool, 246
Group
 buttons, 173
 Mode, 174
 Selectors, 173
Groups, 12, 173
 creating, 173
 editing, 174
 menu, 179
 temporary, 174

H

Hand, 63
Hard Disk Install, 3
Harmony Generator Tool,
248
Hit List, 53, 122
 Translation, 288,
 289
Hot Keys, 64
Hybrid Staff, 54

I

Icons, 14, 338
IFF
 printing notation to,
 120
 sample files, 317
 slides, 310
Import
 MIDI file, 145
 SMUS file, 145
Information, 15
Input
 Arrow, 10
 PipeLine, 10
 Selector, 28, 29
Insert, 78, 189
 Rests, 72

Install Tool, 41
Installation, 3
Interlace, 13, 337
Internal Sounds, 1, 27
Inverter Tool, 249

K

Keep Note Lengths, 72
Key & Scale/Mode, 97, 329
 altering, 107
 entering, 104
Key Filter Tool, 250
Key Signature, 60
Keyboard Splitter Tool, 250

L

Laser Disk, 306
Lead In, 151, 152
 disable, 152
Legatto Tool, 251
Lengthen
 Notes, 72
 With Pencil, 59
List Editing, 121
 Accessing, 121
 Command buttons,
 124
 Edit flags in, 124
List Editor
 editing events, 126
 showing notes in,
 122
Listen, 68, 79
Load
 as SMUS, 146
 Group, 178, 180
 MIDI file, 145
 Song, 21, 22
 Tools, 19
 ToolTray, 224
 Track, 178, 180
Local On/Off, 28
Lock/Mute, 206
Lock All, 208
Lock Buttons, 207
Lock to
 Default Note, 60, 63,
 87
 Key, 60, 63
 Measure, 213
 Resolution, 60, 63,
 87
 Rhythm, 60, 64, 87
Lock Wand to Note, 62
Loop, 154
 Flags, 12
 Mode, 36
 Record, 36
 Recording, 36

Loop Tool, 251

Lyrics, 95

altering, 107

M

MacroTool, 42, 215

adding and

connecting Tools,
218

altering, 221

Braching Output,
219

construction, 216

Input, 219

input, 216

installing, 220

Output, 219

output, 216

parameters, 216

removing, 220

testing, 221

using, 220

Magic Wand, 62

Magnifying Glass, 66

Main Menu, 13

Master Parameters, 15, 95,
101

Media Madness, 15, 40, 287,
289

and the List Editor,
121

Player, 295, 296

Record, 294, 313

Tool, 288

MediaPhile Controller Tool,
312

Merge In Tool, 255

Merge Recording, 35, 177

Metronome, 15, 27, 29, 151

Beat Resolution, 152

countdown, 152

Internal, 151

MIDI, 151

MIDI Channel, 152

MIDI Note, 152

MIDI Tool, 152

Visual, 151

On Lead In Only,
152

window, 151

MIDI, 1

cables, 6, 7

channel, 23, 34

Clocks, 161

Clocks, preparing,
162

Clocks, receiving,
163

Clocks, sending, 161
connecting, 6, 7

File Format, 142

interface, 1, 5

keyboard, 1

merger, 5

Metronome, 151

MIDI Machine

Control, 139

MIDI Time Code,
141

notes, 53

Out Tool, 19

sound module, 1

standard, 53

Triple Play Plus, 6
types of events, 81

MIDI in, 5

multiple, 5

MIDI In Tool, 27, 255

MIDI Out, 5, 31

multiple, 5

MIDI Out Tool, 19, 256

MIDI Thru, 5

MIDI Time Code, 146, 163

Mini Transport, 15, 153, 157

Mix, 78, 188, 192

Mix Maestro, 15, 205

accessing, 205

controls, 206

menu, 207

using, 209

MMC, 139

Modulator Tool, 256

Mono After-Touch, 83, 93,
123

entering, 88

MTC, 141, 166

Multi-Media Tools, 40

Multi-Timbral, 23

Multi-Track recording, 10

Multiple In Recording, 34

Music Tools, 40

Mute, 30, 173, 175, 207

All, 209

N

New

Song, 20, 27

Track, 177, 180

New song, 20

Notation, 69

Centering, 73

Resolution, 70

Transcribing, 71

Transposition, 70

Note, 122

Note Filter Tool, 257

Note Stems, 73

NotePad Tool, 258

O

One-Stop Music Shop, 1, 5, 6

Oppose Rhythm, 73

Output channel, 10

Output PipeLine, 10, 22

Overlap Notes, 72

P

Panasonic Optical Disk, 315

Panning, 205, 206

Parameters

altering, 106

INDEX

dragging, 108
duplicating, 108
editing, 100
erasing, 109
Importing/Exporting
 , 112
Song, 95
Toolizing, 109
 Paste, 78, 188, 192
 Patch, 23
 Bay, 7
 Patch List, 24, 334
 PatchMeister, 133
 Pattern Tool, 275
 Pedal Meddler Tool, 259
 Pencil 59
 Phrase Shaper Tool, 260
 Piano Roll, 54
 changing bounds, 56
 displaying, 56
 Picture in Picture, 142
 PIP, 142, 308
 PipeLine, 10, 16
 Pitch Bend, 82, 92, 122
 entering, 87
 Play, 12, 29, 31, 33, 154
 Play Notes, 68
 Play Only, 30
 Playback, 19, 32
 Plug Tool, 260
 POD People Tool, 315
 Poly After-Touch, 83, 93, 123
 entering, 88
 Position Marker Flag, 11, 156
 Print, 115
 Driver, 115
 lead sheet, 138
 preparing to, 115
 preview, 119
 requester, 117
 resolution, 118
 selecting measures,
 118
 to IFF, 120
 Transposed, 118

Pro Studio Kit, 45
 Program Change, 23, 84, 94,
 123, 334
 entering, 89
 Propagate, 189, 200, 203
 Punch In, 34
 Punch In/Out, 154
 automatic, 34
 manual, 34
 Punch In Flag, 11
 Punch Out, 34
 Punch Out Flag, 11
 Punching Bag Tool, 316

Q

Quantize Tool, 260
 Quick Patch Tool, 19, 23, 24,
 263

R

Real-Time
 Mode, 176
 Track, 160, 176
 Record, 13, 30, 154
 Record/Play/Merge, 10, 30
 Record Activation, 15, 37
 Record Button, 31
 Record Filter, 37, 361
 Global, 37
 Recording
 checklist, 27
 example, 29
 loop, 36
 merge, 35
 multiple-in, 34
 Remove Tool, 41
 Rename ToolTray, 225
 Repeat, 79, 189
 Repeat Tool, 264
 Resolution, 159
 Reverse Tool, 265
 Revert, 21
 Rewind, 12, 154

Rhythm, 98, 229, 331
 altering, 107
 entering, 105
 Roland Sound Canvas, 266
 Run Lock, 149
 Running Bars&Pipes
 Professional, 9
 from a shell, 9
 from Workbench, 9

S

SamplePhone Tool, 317
 Save
 as Default, 21
 as MIDI file, 142
 as SMUS, 146
 Song, 21, 25, 33
 ToolTray, 225
 Saving a Song, 21
 Scala Tool, 319
 Screen Mode, 338
 Scroll With Performance, 69
 Selective Toolize, 79
 Send MIDI Clocks, 162
 Sequencer, 17, 30
 serial port, 5
 Set, 155
 Set Controllers, 208, 209
 Set Flags, 16, 35
 Sforzando Tool, 265
 Share Input, 181
 Shorten Notes, 72
 Show Menu, 54
 sMerFF, 142
 SMoose, 145
 SMPTE, 17, 54, 146, 156, 159,
 163
 format, 164
 frame rates, 164
 offset, 165
 synchronizing to,
 166
 SMUS
 save as, 145

Snapshot, 209
Solo, 173
 Button, 12
Soloing, 175
Song-time mode, 176
Song Construction, 16
 window, 195
Song Parameters, 95, 213
Song Position
 Controls, 153
 Flag, 11, 32, 155
 Line, 25
Song Start Time, 213
Song Time, 213
Sound Canvas Tool, 266
Sound Effects, 176
Speech, 326
Speaker, 68
Stack Size, 9
Staff-Hybrid
 centering, 55
 displaying, 55
Staff-Notation, 57, 69
Staff Center, 55
Start, 12, 31, 33, 154
 Button, 25
Stem Down, 73
Stem Up, 73
Step Entry, 60
Stop, 33, 154
Stop! Tool, 267
Stuck Notes, 38
Subdivider Tool, 267
SunRize Out Tool, 321
SuperGen, 322
SuperJAM!, 133
Support, 42, 339
 Drawer, 20
Synchronization 140
 to MIDI Time Code,
 141
 to SMPTE, 141, 146
synchronizing
Synchronize to

MIDI Clocks, *Tempo*
 Map, 155, 161, 163
 SMPTE, 166
SyncPro, 146, 166
System Exclusive, 85, 94, 123,
129
 about, 131
 Big Sys, 130
 creating, 130
 deleting, 131
 editing, 130, 131
 entering, 130
 recording, 129
 requester, 129, 130
 sending, 131

T

Tablature, 57, 60, 74
 changing note
 *pitch*es in, 64
 changing tuning, 76
 Set Tablature
 Resolution, 74
 string ON/OFF, 74,
 75
 transcribing, 75
Tempo, 12, 29, 159
 controls, 153, 155,
 159
Tempo Change
 dragging, 170
 erasing, 170
Tempo Map, 16, 155, 159
 altering, 168
 creating, 168
 disabling, 171
 disabling on a Track
 basis, 161
 Tempo curves, 168
 window, 160, 167
Tempo Palette, 16, 159
Tempo Tap Tool, 268
The Last Slide Show Tool,
310

Thru, 30
Thru/Play Only/Mute, 10,
207
Time-Shift, 179
Time Code, 164
Time Line Scoring, 16, 211
 accessing, 211
 Scoring Grid, 211
 using, 212
Time Signature, 99
 adding, 182
 altering, 108
 changing, 182
 entering, 105
 master, 181, 183
 placing, 182
 removing, 182
 selecting, 182
Timing Controls, 159
Timing Resolution, 159
Title/Author, 116
Toasty Tool, 323
Tool, 16
 Accompany B, 228
 Alternator, 230
 ANIMal, 302
 ARexx In, 230
 Arpeggi-8, 234
 Articulator, 235
 Branch Out, 235
 Chord Player, 236
 Command
 Performance, 306
 control window, 46
 CounterPoint, 237
 Delay, 237
 Doctor of Velocity,
 238
 Easy Off, 238
 Echo, 239
 Elbow, 240
 Event Converter,
 240
 Event Filter, 242
 Event Scrubber, 243

INDEX

FeedBack In, 243
FeedBack Out, 244
Flip, 244
FreezeFrame, 307
G-LOCKenspiel, 308
General MIDI, 245
Groove Quantize, 246
Harmony Generator, 248
Inverter, 249
Key Filter, 250
Keyboard Splitter, 250
Legatto, 251
Loop, 251
MediaPhile
 Controller, 312
Merge In, 254
MIDI In, 255
MIDI Out, 255
MM Recorder, 313
Modulator, 256
Note Filter, 257
NotePad, 258
Pattern, 275
Pedal Meddler, 259
Phrase Shaper, 260
Plug, 260
POD People, 315
Punching Bag, 316
Quantize, 260
Quick Patch, 263
Repeat, 264
Reverse, 265
SamplePhone, 317
Scala, 319
Sforzando, 265
Sound Canvas, 266
Stop!, 267
Subdivider, 267
SunRize Out, 321
Tempo Tap, 268
The Last Slide Show, 310

Toasty, 323
Transpose, 269
Triad, 269
Trigger, 270
UnQuantize, 271
UnStick, 271
Velocity Modifier, 272
Velocity Splitter, 273
Yak, 326
 Tool names, 41
 ToolBox, 16, 19, 40
 Question Mark, 19, 41
 Toolize, 46, 66, 78, 189
 in the Graphic Editor, 65
 selectively, 79
 ToolPad, 12, 46, 65
 editing a Tool in, 46
 placing a Tool in, 46
 selecting a Tool from, 46
 Toolizing with, 46
 using Tools in, 45
 Tools, 39, 227
 automatic loading of, 42
 branching, 44
 control window of, 43
 duplicating, 44
 examples, 48
 Installing, 41
 merging, 44
 moving, 44
 Multiple Usage of, 39
 no Tools in the ToolBox, 41
 placing in Tracks, 41, 43
 removing, 42, 45
 Tool Icons, 41
 Tool Modules, 39

utilizing, 43
 ToolTray, 223
 accessing, 223
 editing a Tool in, 224
 naming a Tool in, 224
 placing a Tool in, 223
 using a Tool from, 224
 ToolTrays, 47
 accessing, 47
 Track
 menu, 177
 Name, 10, 116, 161, 175
 rearranging, 176
 Tracks window, 10, 17
 Transcription Options, 71
 Transport, 17, 153
 Controls, 31
 Mini-Transport, 153
 Remote Control, 157
 Transport Controls window, 153
 Transpose Tool, 269
 Transposed Key, 70
 Treble Clef, 116
 Triad Tool, 270
 Trigger Tool, 270
 Triple Play Plus, 6, 152
 True Colors, 149
 Tying Notes, 63

U

Undo, 67, 68, 190
 Buffer, 338
 UnLock All, 209
 UnMute All, 209
 UnQuantize Tool, 271
 UnStick Tool, 271
 Update, 67, 68
 Use Tempo Map, 160

V

Velocity, 54, 57
Velocity Curve, 57
Velocity Modifier Tool, 272
Velocity Splitter Tool, 273
Vertical Pipes, 44
Video, 142
Video Toaster, 287, 323, 326
Volume, 205, 206, 207

W

Window icons, 9, 13
Window To Front/Back, 338
Windows menu, 14
Workbench Pointer, 337

Y

Yak Tool, 326
